

# The Australasian MANUFACTURER

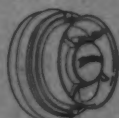
SERVING ALL INDUSTRY

L XXXIV - No. 1804.

Registered at the G.P.O., Sydney, for  
transmission by Post as a Newspaper.

Saturday, October 28, 1950.

## PROPELLER FANS by G.E.C.



Xpelair Window Fan.



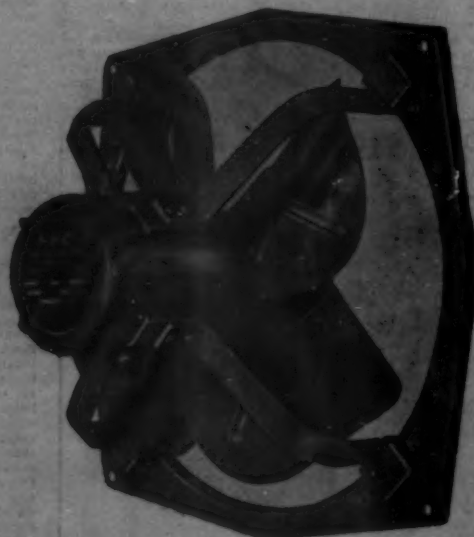
Aerofoil Axial Flow Fan.



Man Cooler Fan.



Air Circulator.



G.E.C. Propeller Fans with blade sizes from 71" up to 72" diameter are designed for long, efficient and trouble-free service. The totally enclosed motors are specially designed for fan duties only. Provision is made for mounting the fan in any plane. The blades have been designed for large air movement with a minimum of noise. The whole unit is resiliently mounted and forms a well-conceived, British-made quality product.

*British General Electric Co. Pty. Ltd.*

(Sole Australian Representatives of The General Electric Co. Ltd. of England)

SYDNEY...NEWCASTLE...MELBOURNE...ADELAIDE  
BRISBANE...PERTH...HOBART...LAUNCESTON



# AFTER BUSINESS HOURS

## A Bacchanalian Pilgrim's Progress

[The following was an extremely entertaining discourse given recently by a well-known Adelaide musician, Mr. John Horner, at a meeting of the Bacchus Club in Adelaide.]

One of the best books I've read on the general application of music was one called "A Musical Pilgrim's Progress", by J. D. M. Rorke, published perhaps 30 years ago. It described the musical development of the author, from the early days of pianolas, when he developed an entirely uninstructed passion for Chopin's music, through a later stage with the first gramophones, when he went crazy over Beethoven's string quartets, up to the period when he wrote the book. I've forgotten what his latest craze was just then, but I always remember how his passion for the things he liked was quite infectious and instructive even to a trained musi-

cian, in spite of the author's completely spasmodic and patchy knowledge of the subject.

In the agreeable matter of grog, I suppose that this Bacchus Club has discussed the subject from nearly every conceivable angle in the course of its formal and informal activities. But it occurred to me, when I received the very flattering invitation to speak to you to-day, that, from the heights of experience and knowledge which you gentlemen adorn you might care to look down with kindly interest or, at least, forbearance, for a few minutes while I attempt to recall the more memorable steps in the Bacchanalian Pilgrim's Progress that for me has reached its climax here to-day.

On both sides of the blanket I come from uncompromising lines of rabid Scottish teetotalers. I have never dared to trace my ancestry further back than three generations. As far back as that,

no member of my family had ever been known to allow alcohol to pass his lips, except at the doctor's orders or at the Lord's supper. To us, all varieties of grog were slumped together under the dread name of "Drink." Of doubtful characters it would be asked in a hushed tone, "Does he drink?" No one who "drank" was ever invited to our house.

I may say outright that I have nothing but admiration for the motives of my parents in this matter. They were not fanatical, merely prudent. In Glasgow, where they belonged, drink was a public nuisance. It meant the Cowcaddens, the Gorbals and Argyle Street on a Saturday night, when a few bad whiskies set everyone thinking, "Glesca belongs to me." The favourite method of settling any arguments about this question was to sail right in, give all you'd got and take all that was coming to you—no holds barred, except that ladies were not allowed to hold each other by the hair—at least not by the hair of the head. When unconscious semi-naked Amazons were seen being dragged off by the policeman (known locally as the polis-man) everyone muttered "Drink", and they were quite right.

My parents were prudent, not only in inculcating in their children the perfectly accurate idea that drink meant social risk; in any case, they couldn't afford to drink, and that alone made it wrong to drink. They were not fanatical and they were not unkind. I remember once when the local soak in our suburb, had collapsed in the gutter and some of us, coming off the 5.15 train, had helped to carry his unsavoury corpse into the nearby undertakers, my father asked me rather secretly afterwards if he had smelt of drink. I confessed that there had perhaps been just a slightly perceptible suggestion of an alcoholic odour permeating the district; whereupon my father said very earnestly, "Don't mention it to anyone, will you?" Such parents are the salt of the earth.

It was to my maternal grandfather that I owed my first stolen glimpse of the forbidden grogs. He was a sprightly old warrior who used to delight in skelping the lugs off his grandchildren. His nickname for me was "Bugglerugs." He used to travel for the Imperial Tobacco Company of Great Britain. His suitcases smelt marvellously of cigars. In a corner of his great old-fashioned sideboard he kept a

bottle of Scotch—for purely medicinal purposes, he would explain. When the house was empty, I used to pinch lumps of loaf-sugar from the pantry, soak them in whisky and crunch them with solemn deliberation and gusto. Scotch (and sugar) was the first drink I really liked, and the only one I had any opportunity of cultivating before the first World War.

At 18, I joined the Royal Flying Corps—out of sheer foolish bravado, as far as I can remember. Here, drinking was completely beyond me, for the simple reason that, even as a cadet, I received a salary of one shilling per day, and my people could give me no allowance. Drinking there was in plenty all around, but it was quite out of the question for me. At Farnborough, the young flying officers went strutting around in fur collars, gloves, and long hair, as drunk as lords every night. Only by their incongruous riding breeches could you distinguish them from famous pianists. But all this was not for me.

However, the great day dawned; I was gazetted at last, and my salary jumped from £18 a year to £400, a financial disaster from which I have never fully recovered. Before I had time to change my habits I found myself posted to Italy. I spent a night in Paris on the way through. Believe it or not, I slept at the Y.M.C.A.

It was in Italy that the habits of generations were overturned. I can still remember the officers' mess of 139 squadron in 1918 in a tin Nissen hut at Villavetta, somewhere north of Verona. At the head of the table was the C.O.—only 22 himself—a Canadian—Major W. G. Barker, V.C., D.S.O. and bar, M.C. and 2 bars, Croix de Guerre and Italian Silver Medal, and 60 odd E.A.—and with him a mixed bag of seasoned toughs. Both the Flight Commanders were Australians—Dalrymple and Hursthouse. Down at the kitchen-end were all the latest conscripts—18-year-old office boys, most of us—trying hard to look as tho' we belonged. I had kept off the grog till after dinner. Then, for the loyal toast, some of my new friends ordered me a creme de menthe. I have never looked back.

I had sipped beer before that, and spat it out. Memories of Argyle Street on a Saturday night kept me off the straight spirits. But this smooth caressing creme de menthe was something quite irresistible—something to dream

(Turn to page 32.)

LOOK YOUR BEST!



PRIDE IN APPEARANCE

We, too, have pride:—Pride in every hat that leaves our mill . . . Pride in the dependable service each hat will give its wearer . . . Pride in our splendid customer relations over the past thirty-seven years.

**AKUBRA**  
hats of Quality



*Tremendous Trifles in Metal*

Leaders in mass production  
of meticulously accurate  
small metal stampings.

**EYELETS**



EYELETS PROPRIETARY LTD.  
WINDSOR, VICTORIA

EYA 50

# MACHINERY NEWS



## PACKING.

Whether you do much or little packing for shipment — whether your requirements are large or small — WESTON'S can supply them to your utmost satisfaction.

WESTON'S at the present time are testing various appliances for better packing methods, which will be made available to you when found suitable.



## PACKAGING.

Mechanisation of packaging is a "Must" in up-to-date manufacturing plants. WESTON'S have succeeded in obtaining agency and distribution rights of the most modern and efficient packaging machinery made in Australia, Great Britain, France, Germany, Belgium and various other countries, including the United States of America.

If you have any type of packaging problem, WESTON'S are able to assist you through their Packaging Advisory Department.

If you want to build packaging machines to suit your own particular requirements, WESTON'S are able to assist you through their engineering department.



## MATERIALS HANDLING.

Modern Materials Handling methods save man-hours, reduce manufacturing costs and speed up production. WESTON'S carry a complete range of the latest and most up-to-date handling equipment.

IF YOU REQUIRE ANYTHING IN THE PACKING, PACKAGING OR MATERIALS HANDLING FIELD, CONTACT YOUR WESTON REPRESENTATIVE TO-DAY

MELB.: 188 Bay Street, Port  
Melbourne, Vic.  
(MX 6043)

BRIS.: 121 Eagle Street,  
Brisbane, Qld.  
(B 3327)

NEWCASTLE: Organisation  
Pty. Ltd., King & Perkin  
Streets, Newcastle.  
(B 1637)



PROPS. WESTON'S PTY. LIMITED

WESTON HOUSE, MACQUARIE PLACE, SYDNEY  
TELEPHONES - BU 3346-7-8 and BU 3761

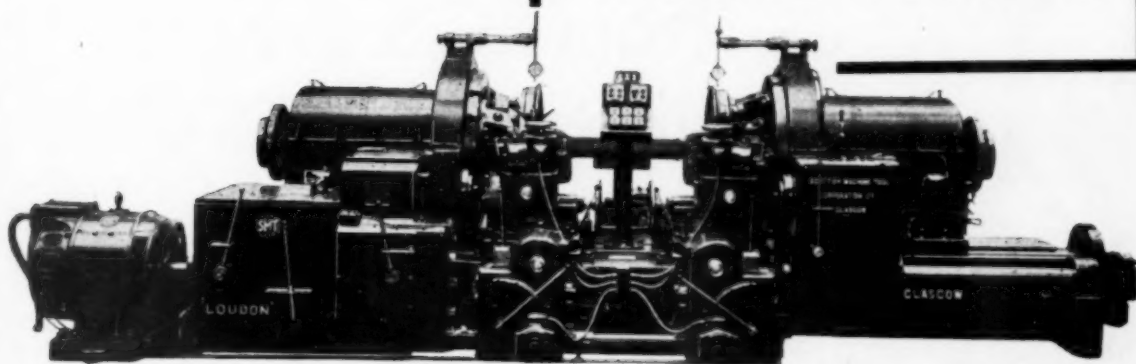
ADEL.: 93 Flinders Street,  
Adelaide, S.A.  
(Cent. 5527)

PERTH: 18 William Street,  
Perth, W.A.  
(B 6693)

CAIRNS: P. L. & G. Potter,  
91 Grafton Street, Cairns.  
(Cairns 3188)



# LOUDON HEAVY DUTY WHEEL LATHE



- **BED** — A heavy casting of deep box section, strongly ribbed. Specially reinforced under tool rests. Unbroken top surface, running whole length of bed, ensures extreme rigidity.
- **HEADSTOCKS** — The fast and loose headstocks have extra-wide bases to resist any tendency to lift during heavy cutting. The fast headstock is bolted and steady-pinned to form an almost integral part with the bed. The loose headstock has a motor-driven, quick-power traverse, with safety slipping clutch and limit switch. It locks pneumatically in any position.
- **CALIPERING** — A calipering device ensures that both wheels are turned to same accurate diameters.
- **LUBRICATION** — Centralised high-pressure pump lubrication where possible . . . otherwise by "one-shot" system.

Equipped for multiple tooling by a method which enables the various operations to be performed in sequence, and which also ensures a very steady and high output, the Loudon Heavy Duty Wheel Lathe has been designed and produced by the Scottish Machine Tool Corporation Ltd., of Glasgow, to meet the exacting needs of to-day. It provides high speeds and the range of feeds required for the maximum efficiency of tungsten carbide-tipped tools.

The Loudon Lathe illustrated is a Clyde-built, 7ft. 6in. diameter model. All machines are rigorously inspected during construction and tested to standard limits of error before dispatch.

*Complete specifications and technical particulars will be furnished promptly on request*

*Manufactured by*

**Scottish Machine Tool Corporation Ltd.**

*Distributors:*

**GIBSON BATTLE & CO. LIMITED**

**535 Kent St., Sydney, N.S.W. Tel. M 6661 ● 262 Hunter St., Newcastle**

VICTORIA: Gibson, Battle (Melb.) Pty. Ltd., 84 William Street, Melbourne. SOUTH AUSTRALIA: Parsons & Robertson Ltd., 172 Pulteney Street, Adelaide. QUEENSLAND: Underhill, Day & Co. Pty. Ltd., T. & G. Building, Brisbane. WEST AUSTRALIA: Flower, Davies & Johnson Ltd., 413 Murray Street, Perth.



## *Manufacturers!* **You Can Count on Good Turnover From F.G.S. RIVETS**

Every business man knows the importance of turnover, but to the man who uses rivets it has another and special significance. A rivet can't give uniform, clean, neat turnover unless it's made **accurately** from metal of just the right hardness and toughness. And **that's the way all F.G.S. rivets are made.**

The F.G.S. plant has turned out literally hundreds of millions of rivets (plant capacity over a million a day!) — bifurcated solid, tubular, and semi-tubular, in steel, brass, copper and aluminium. In fact, any type of rivet used in radio and electrical manufacturing — for radio chassis, radiators, fans, irons, toasters, table grillers, and all other electrical equipment.

*Tubular and Semi-tubular, Solid, and Bifurcated Rivets in all standard sizes,  
in steel and non-ferrous metals.*



### **RIVETS** *They Fit.. They Hold..*

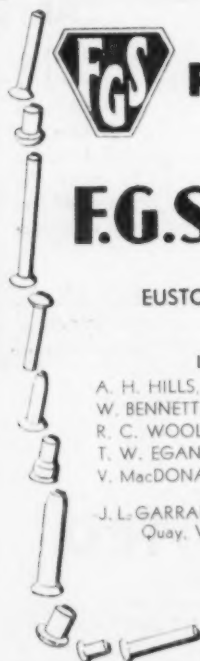
MANUFACTURED BY  
**F.G.S. PRODUCTS PTY. LTD.**

EUSTON ROAD AND MADDUX STREET, ALEXANDRIA, N.S.W.

Telephone: LA 5074

Interstate and New Zealand Agents:

A. H. HILLS, Orient Line Bldg., 113 Eagle Street, Brisbane, Queensland.  
W. BENNETT, 433 Spencer Street, West Melbourne, Victoria.  
R. C. WOOLLARD, 18 Chesser Street, Adelaide, S.A.  
T. W. EGAN, 75 King Street, Perth, W.A.  
V. MacDONALD BRAME & CO., 57 Collins Street,  
Hobart, Tasmania.  
J. L. GARRARD & SON LTD., Customhouse  
Quay, Wellington, N.Z.



# The DOT line of **TRIMOUNT** TUBING AND WIRING **CLIPS**

PREVIOUSLY IMPORTED FITTINGS NOW  
BEING MADE IN AUSTRALIA!



Made in our Australian factory on Australian developed machines and employing all Australian material, "Trimount" Clips are already being used by many industries. These time-saving fasteners take the place of screwed-on clips for holding tubes and wires to their supporting structures.

"Trimount" Clips are economical, quickly attached and permanent. Every clip is rust-proof and will keep on doing a good job.

25 types of "Trimount" Clips are now available. Others will be added as required by manufacturers.

*Applicable to these trades*

APPLIANCE • ENGINEERING • RADIO  
• ELECTRICAL • AUTOMOTIVE

## CARR FASTENER

COMPANY OF AUSTRALIA LIMITED

Enquiries are invited from all trades requiring serviceable clips in modern design. Such enquiries should be addressed to the Company's Sales Engineers in Adelaide, Sydney or Melbourne.

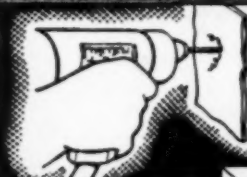
IN SYDNEY: Mr. S. B. Tonkin, 85 Commonwealth Street.

IN MELBOURNE: Mr. C. A. Muller, 355 William Street.

IN ADELAIDE: Carr Fastener Co. of Australia Limited,  
Royal Park, Alberton 1, S.A.

Telegraphic Address: "Carrfast," Adelaide

- INSTANTANEOUS • RATTLEPROOF
- ONE PART • NO TOOLS REQUIRED
- INSTALLED WHEN ONLY ONE SURFACE IS ACCESSIBLE • SAVES TIME IN ASSEMBLING OPERATION.



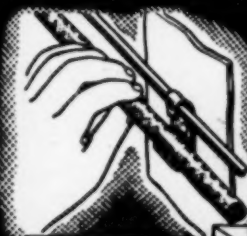
DRILL OR PUNCH HOLE



INSERT FASTENER



SNAP IN TUBING



SNAP IN WIRING HARNESS



# This Oil is 15 years Old!

\* USED IN A TURBINE  
GENERATOR OF 10,000  
K.W. CAPACITY IN A  
SYDNEY POWER HOUSE.

Yes, this oil has been in continuous use for 15 years, or 131,000 hours\*. That's tough on any lubricant, but Atlantic Teresso Oils take these gruelling conditions in their stride.

Refined from *selected* paraffin base crudes, Teresso Turbine and Diesel Oils give temperature-viscosity characteristics outstanding in the field of industrial lubricants.

**TERESSO** grades also give you these characteristics

- ♦ Extremely long life because of their very low neutralisation number and outstanding resistance to sludging.
- ♦ Trouble-free service due to their freedom from foaming, ease of cleaning or filtering, and continual protection from emulsification.
- ♦ Complete protection for gears or bearings.

For further information on these outstanding oils, 'phone or write to the Technical Sales and Service Department of the Atlantic Union Oil Co. in your State.

## ATLANTIC TERESSO OILS





*I admit I'm a*  
**"SABOTEUR"**

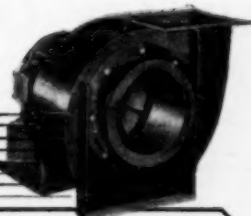
"I'm Dust . . . I throw dust in your eyes all along the production line . . . grit in your machine bearings . . . ruin your high gloss finishes . . . cause absenteeism through illness, land you with claims for a variety of industrial diseases. Yes, I'm the ally of all the won't works and I may be comfortably installed in YOUR factory."



AIR CONTROL EQUIPMENT knows all the answers to this problem no matter what form it takes, and will eliminate dust from the atmosphere in your production plant. This will step up your employee efficiency and output.

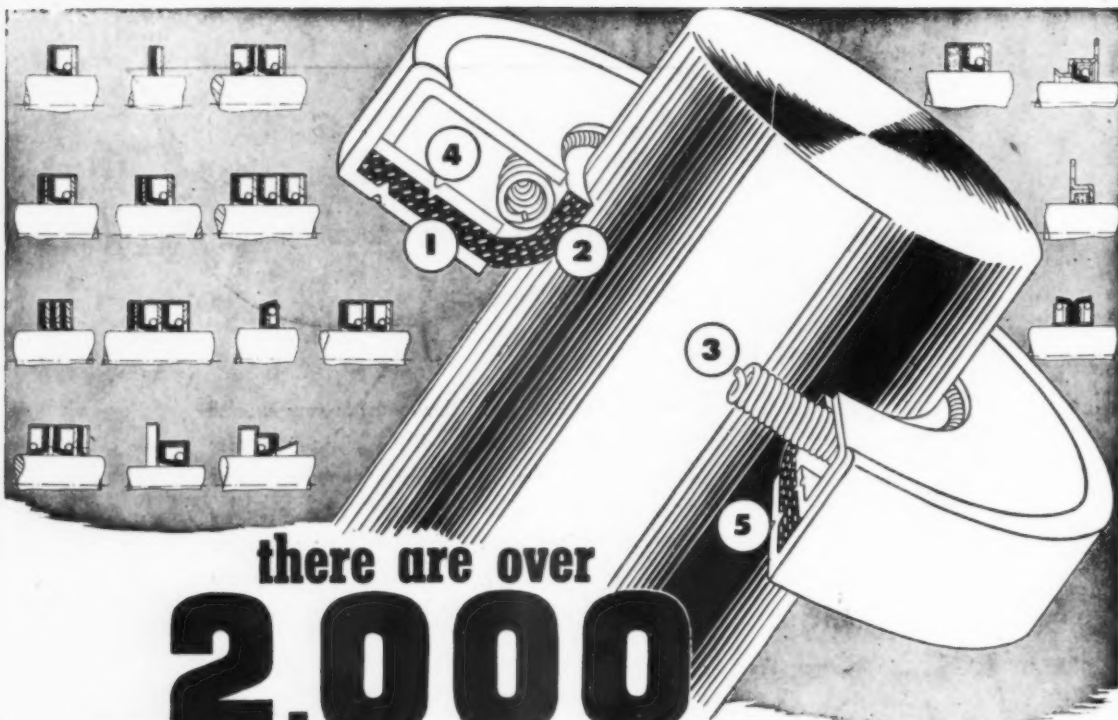
**DUST AND DIRT ARE DEADLY!**  
*Safeguard NOW with*

**AIR**  
**CONTROL**



**AIR CONTROL EQUIPMENT PTY. LTD.**  
DUNNING AVENUE • WATERLOO • N.S.W. Phone MU 1211  
A Unit of Electricity Meter and Allied Industries Ltd.





there are over  
**2,000**  
SIZES AND TYPES OF THE  
**Fla-Seal**  
OIL AND GREASE RETAINER

- \* The Fla-Seal Oil and Grease Retainer is constructed on sound and proven engineering principles to standard pre-determined tolerances in over 2,000 sizes and types for every industrial application. Fla-Seal provides a perfect bearing seal, preventing leakage of the lubricant from the bearing and the passage of foreign matter into the bearing.  
J. C. Ludowici & Son Ltd. offer a free technical service on the selection and application of Fla-Seals to operate efficiently under all normal and adverse conditions.  
Literature and Price List available without obligation.  
Joint Manufacturers: J. C. LUDOWICI & SON LTD., & A. FLAVELL PTY. LTD.

- 1 The sealing member of the Fla-Seal is moulded under high pressure from Lutan leather specially tanned and treated for oil retainer requirements.
- 2 The sealing lip of the leather is uniformly smooth and accurately finished, ensuring good sealing properties with low spring tension.
- 3 The tension spring, having the capacity to retain its elasticity for almost an indefinite period, holds the leather sealing lip against the shaft, preventing the escape of lubricant and automatically adjusting the seal for wear.
- 4 The leather seal is prevented from rotating in the casing by projections stamped into the metal case and washer which securely hold the leather in position.
- 5 The dimensions of the seal, inside, outside, and depth, are all carefully checked to conform to permissible limits of accuracy.

WHOLESALE FACTORY SELLING AGENTS:

**J. C. LUDOWICI & SON LTD.**

117 YORK STREET, SYDNEY. BX 5841. 20-26 QUEEN'S BRIDGE STREET, STN. MELBOURNE, M 3101-3.



OTHER LUDOWICI LINES OF EQUIPMENT INCLUDE:- Leather and Rubber Belting, Conveyor and Elevator Belting, Round Leather Belting, Textile Leathers, Belting Accessories, Leather Packings, High-Speed Grinder Belts, V Belt Drives, Industrial Clutches, Plain Bearings, Anti-Friction Bearings, Steel Shafting, Shafting Couplings, Shafting Hangers, Micrid Bearing Metals, Porous Bronze Bushes, Gears, Pulleys, Wall Brackets, Variable Speed Drives, Ludowici Pivot Drives, Fla-Seal Oil Retainers, Composition Packings, Lutex Industrial Plastics, Industrial Gloves, Rubber Hose, Lemcol Trucks, Wheels, Castors, etc., Perry Chain Drives, D. C. Silicons



# "Production Line" Perfection



it lasts years longer  
if the cabinet is . . .

# Control

## STEEL SHEET

C.R.M. DIVISION OF LYSAGHT'S WORKS PTY. LIMITED  
JOHN LYSAGHT (AUSTRALIA) PTY. LIMITED — GENERAL SALES AGENTS.  
SYDNEY: 33 Macquarie Place. MELBOURNE: 70-84 Clarendon Street, South  
Melbourne. ADELAIDE: 13 Grenfell Street. BRISBANE: 307-311 Queen Street.  
FREMANTLE: Corner of Short and Pakenham Streets. WELLINGTON, N.Z.: John  
Lysaght's Bristol Works Limited.

# The RUBBER INDUSTRIES

— and —  
their  
REQUIREMENTS

The requirements of the rubber industries become more exacting and greater in tonnage as those industries continue to expand in all directions.

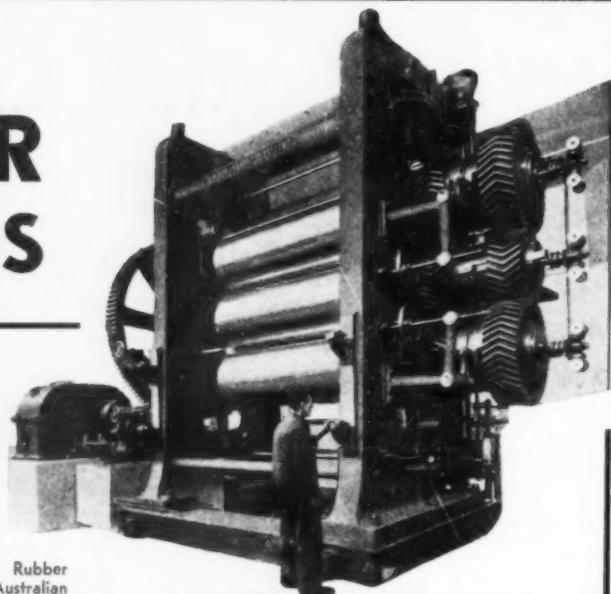
"CORBETT'S" has always been well known for Rubber Chemicals (and all other chemicals), and, as the Australian agents for The Rubber Regenerating Co. Ltd., England, "CORBETT'S" is also in a very sound position to offer practically any other raw materials used in rubber fabrication. Technical information is freely available, and, generally, "CORBETT'S" services to the rubber trades are well worth closer investigation.

**RUBBER DISPERSIONS:**

**RECLAIMED RUBBER:**

**RUBBER CHEMICALS:**

**RUBBER LABELS:**



**SMOKED SHEET  
CREPE RUBBER  
LATEX GRADES**

Aqueous dispersions of rubber are becoming increasingly popular in many trades, where they are excellent and economical substitutes for Latex in certain applications.

An economical substitute for fresh raw sheet, Reclaimed Rubber is finding wider application in manufacture of certain articles where the properties of fresh are not strictly required.

As Australian agents for The Naugatuck Chemical Division of The U.S. Rubber Co., we are pleased to announce that this range of Accelerators, Antioxidants, etc., will shortly be available from the British factory.

Brilliantly coloured labels to your own design. These are in semi-cured rubber and are completely cured into the finished article. The finishing touch for Tyres, Retreads, Footwear, Hot Water Bottles and all rubber articles.

— *Robert Corbett Pty. Ltd.* —

"Corsol House," 274-6 Kent Street, Sydney, N.S.W.  
and throughout Australasia

# TOROID

HIS ORGANISATION REALLY OFFERS INDUSTRIAL DEVELOPMENT

## INDUSTRIAL SUPPLIES PTY. LTD.

### ANNOUNCING!

The manufacture of "TOROID" BEARING METAL under exclusive rights for AUSTRALIA and NEW ZEALAND in accordance with the World Patented formula of TH. GOLDSCHMIDT CHEMICAL WORKS, ESSEN.

Previously marketed under Trade-name

**"THERMIT"**



The World's Best "ALL-PURPOSE" BEARING METAL (Guaranteed made from virgin metals)

#### PHYSICAL AND MECHANICAL PROPERTIES

	"TOROID" BEARING METAL	(Regal Metal) 83.2% Sn, 6.6% Cu, 11.1% Sb	WM. 70 White Metal, 70% Tin
Melting Point	420° C. = 788° F.	390° C. = 716° F.	408° C. = 761° F.
Softening Point	245° C. = 473° F.	232° C. = 449° F.	185° C. = 365° F.
Casting Temperature	480-520° C. = 896-968° F.	470-600° C. = 878-1112° F.	480-500° C. = 896-932° F.
Shrinkage	0.58%	0.5%	0.55%
Brinell Hardness at—			
20° C.	28-30	32-34	29-31
50° C.	21.5	23	19.5
100° C.	15.5	14	8.5
125° C.	13	10.5	8.5
Breaking Load at 20° C.	24,600-27,000 lbs.	27,000 lbs.	21,600 lbs.
Compression at Breaking Load at 20° C.	35 to 38%	40%	39%
Load with 2% Compression at 20° C.	12,500 lbs.	14,000 lbs.	13,000 lbs.
Breaking Load at 100° C.	12,500 lbs.	12,000 lbs.	12,200 lbs.
Compression at Breaking Load at 100° C.	40 to 45%	40%	56%
Load with 2% Compression at 100° C.	10,000 lbs.	8,500 lbs.	7,300 lbs.
Admissible Load at—			
V = 2.02 Ft./Sec.	2,133 lbs./Sq. In.	1,990 lbs./Sq. In.	
V = 3.44 Ft./Sec.	2,133 lbs./Sq. In.	1,777 lbs./Sq. In.	
V = 6.89 Ft./Sec.	1,777 lbs./Sq. In.	1,777 lbs./Sq. In.	
V = 8.94 Ft./Sec.	1,777 lbs./Sq. In.	1,630 lbs./Sq. In.	
V = 13.12 Ft./Sec.	368 lbs./Sq. In.	356 lbs./Sq. In.	
P = V at—			
V = 2.02 Ft./Sec.	4,433 lbs./Sq. In. Ft./Sec.	4,106 lbs./Sq. In. Ft./Sec.	
V = 3.44 Ft./Sec.	7,373 lbs./Sq. In. Ft./Sec.	6,533 lbs./Sq. In. Ft./Sec.	
V = 6.89 Ft./Sec.	12,272 lbs./Sq. In. Ft./Sec.	12,272 lbs./Sq. In. Ft./Sec.	
V = 8.94 Ft./Sec.	15,864 lbs./Sq. In. Ft./Sec.	14,605 lbs./Sq. In. Ft./Sec.	
V = 13.12 Ft./Sec.	4,666 lbs./Sq. In. Ft./Sec.	4,666 lbs./Sq. In. Ft./Sec.	

FIGURES NOT  
AVAILABLE

#### USE "TOROID" BEARING METAL

The highest Quality Metal at the LOWEST COST

For full particulars: **TOROID INDUSTRIAL SUPPLIES PTY. LTD.**

528-530 Collins Street, MELBOURNE, VIC.



Agents — Q'land: Messrs. HOEY-FRY PTY. LTD.  
N.S.W.: TOROID INDUSTRIAL SUPPLIES (N.S.W.) PTY. LTD.  
S.A.: A. K. MENZIES.

Tas.: DOUGLAS and FRASER-WEDDS MACHINERY AGENCY.  
N.Z.: RICHARDSON-McCABE and CO. LTD.

## it's on the cards

that one (or all) of these prove to be the answer to an assembly problem that's worrying you right now. Three aces — Simmonds, Pinnacle and Spire Speed Nuts — they stay put.

The self locking Simmonds Nut with its fibre collar replaces castle nut and split pin. The Pinnacle Nut has a non-corrodible metal diaphragm and is more suitable where extremes of heat and humidity exist. Spire Speed Nuts for threaded and non-threaded members. Their great features are speed and versatility, giving simplified assembly at very reduced cost. Made of spring steel, each Spire Speed Nut has an arched base which when locked exerts considerable force on the gripping prongs—but in such a way that it doesn't harm threads.

All three nuts successfully withstand the effects of vibration, expansion and contraction. All three have special purposes and are busily engaged in more industries than you might think possible. We welcome the chance to advise you which to use for your assembly problem.



## SIMMONDS AEROCESSORIES (PTY.) LTD.

357 EXHIBITION STREET, MELBOURNE, C.I.



# The Australasian MANUFACTURER

Established 1916

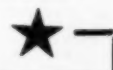
35th Year of Service to Industry

Telephones: Sydney, BU 3493, BU 3494.  
Melbourne, FJ 3256.

Postal Address: Box 1687, G.P.O., Sydney, and  
Box 4525, G.P.O., Melbourne.

■ Australia's National Manufacturers' Newspaper circulating in all States, New Zealand and Overseas. A weekly newspaper devoted to industrial efficiency and the manufacturing progress of Australia. Subscriptions within Australia and New Zealand (including Annual Number), £1/10/-; Great Britain and Possessions, £2; Foreign, £2/10/- . All subscriptions payable in advance. Microfilm subscription by arrangement.

PAGE FIFTEEN OCTOBER 28, 1950.



## Increased Productivity and Industrial Survival Their Close Interdependence

"The drift in productivity is Australia's greatest source of economic disorder and solution of the difficulty, is the nation's greatest problem. Unless production increases greatly, Australia will face the high jump."—Professor Sir Douglas Copland, Vice-Chancellor of the Australian National University at Canberra, in a recent address to the Institute of Sales and Business Management, Sydney.

**D**EFINING productivity as the level of output per man per year, Sir Douglas recorded the lamentable fact that during the past decade Australian productivity has made practically no increase. "At most," he added, "it has expanded at the rate of one per cent. a year."

He then proceeded to discuss the main contributing causes to this virtual deadlock, contending that while due regard must be paid to the effects of the shorter working week, the major cause is the failure of Government, management, and labour to respond effectively to the changed conditions of the present-day economy. "The economy," he declared, "needs a vital change of attitude by management and labour and, to a lesser extent, by Government to develop the team spirit necessary to raise output. In Britain, Government, management, and labour combine to point out the advantages that spring from increased production. . . It is no accident that productivity in Australia is standing still, whilst Britain's is rising at the rate of 6 per cent. per annum."

Australia's industrial trinity—Government, management, and labour—must, accordingly, recast and modernise their views on the production issue, each recognising the importance of the part to be played and determining that maximum effort shall be put into the job.

Sir Douglas regards a statesmanlike lead from the Government as the first essential. "Perhaps," he says, "the most important requirement is a clear lead from the Government, and it now appears, following the Prime Minister's recent speech on inflation, that the Government will give such a lead." The Australian industrial world awaits developments in this regard with the keenest of interest.

"The Manufacturer" feels that Sir Douglas is distinctly unfair to management when he contends that its chief contributions to the solution of the production problem are "exhortations." "These exhortations," he said, "often take the form of castigation of Labour's attitude, and so neglect the positive contribution management itself could make." What of the installation by management of the most modern machines and machine tools? Of the employment of the latest manufacturing pro-

cesses? Of the utilisation of the newest techniques? Of the initiation of incentive systems? Of the establishment of Shop Committees? Of the provision of the most up-to-date and hygienic working conditions? Of the establishment of welfare and recreational facilities? Are none of these to be ranked as positive contributions? Admittedly, all of these modern facilities may not be available in every factory and engineering plant throughout the land. But this journal has no hesitation in declaring that they are forthcoming in the overwhelming majority and, as such, make a positive and highly significant contribution to the attainment of higher output.

When every aspect is carefully studied, however, it becomes abundantly plain that the whole crux of the situation is the approach of the trade-union movement to continuity and increase of production. "There is," Sir Douglas emphasises, "the need for a changed attitude on the part of labour. Workers should understand clearly that they have nothing to lose by higher productivity and much to gain. To convince Labour that it has about reached the limit of achievement in redistributing income is most important. Continued Labour progress depends on a revised attitude to the level of output."

This revised attitude already has been attained by the workers of Britain and the workers of the United States. This is evident from the rising level of productivity in the United Kingdom—some 6 per cent. as already quoted—and the spectacular rise in the United States, where physical production is approximately double the pre-war figure, though the labour force has been increased by less than half.

The recognition by a large and powerful section of American labour, of the interdependence of high productivity and high living standards, was voiced in the five-year industrial peace treaty recently concluded between General Motors of America and the United Automobile Workers' Union, this treaty stating, *inter alia*: "The annual improvement factor provided herein recognises that a continuing improvement in the standard of living of employees depends upon technological

## THE AUSTRALASIAN MANUFACTURER

[Page 16, October 28, 1950.]

progress, better tools, methods, processes, and equipment, and a co-operative attitude on the part of all parties in such progress. It further recognises the principle that to produce more with the same amount of human effort is a sound economic and social objective."

The elucidation of these fundamental facts to the workers of Australia is unquestionably the major present-day task of the trade-union movement. Indeed, the measure of its skill and its earnestness in the execution of this task may well be deemed the determining factor in

this nation's future manufacturing expansion and development—hence its survival as a modern Industrial Power.

Management is ever willing to meet the workers half-way; to discuss their problems with them; to endeavour to see their point of view; to co-operate actively in any plans to promote improved relations.

An honest fair-minded approach to the closely-intertwined questions of human relationships and higher productivity could work veritable miracles along the entire Production Front.

# Pithy Jottings of Industry and Industrialists

## QUARTERLY BASIC WAGE RISE IN NOVEMBER.

The Registrar of the Commonwealth Arbitration Court, Mr. J. F. Taylor, announced during the past week that the basic wage is to increase in all States as from the first pay period in November. Rises and new basic wages will be: Sydney, 4/- (£7/6/-); Melbourne, 3/- (£7/3/-); Brisbane, 3/- (£6/15/-); Hobart, 4/- (£6/19/-); Adelaide, 3/- (£6/17/-); and Perth, 3/- (£6/19/-). The rise will be additional to the £1 weekly increase granted by the Arbitration Court on October 12th.

## "FRIGIDAIRE" TRADE MARK.

On page 77 of our July 1st issue appeared a reported decision of the Supreme Court of Canada expunging the trade mark "Frigidaire".

This bald statement, we are informed by General Motors-Holden's Limited, is apt to be misleading both to manufacturers and the public, because the expungement of "Frigidaire" was a purely technical proceeding under the Act, because the trade mark registered in 1929 had not been accompanied by a declaration that the word Frigidaire had acquired a secondary and distinctive meaning as required by Section 29 of the Canadian Act.

The expungement judgment actually incorporated a Court declaration that the word Frigidaire had acquired a secondary and distinctive meaning, remedying the original defect, and enabling an effective registration to be made.

Pursuant to the judgment of the Exchequer Court, confirmed

by the Supreme Court of Canada, the Frigidaire Trade Mark was re-registered on the 24th April, 1950, claiming use of the mark since September 21, 1918, in the U.S.A. and since before 1926 in Canada.

The Canadian trade mark "Frigidaire" is now fully protected and the defect of the original registration has been corrected.

In Australia, the Registrar declared as far back as 1930 that the word "Frigidaire" be deemed a distinctive mark and under Trade Mark Law in Australia, the trade mark "Frigidaire" is fully protected.

## DEATH OF AIR CONDITIONING PIONEER.

The death has been announced of Dr. Willis H. Carrier, founder of the Carrier Corporation of America, and acknowledged as the father of Air Conditioning. He was particularly famous for his rational psychrometric formulae which formed the basis of air conditioning as an exact science. Dr. Carrier visited Australia during 1936 in the course of a tour of inspection of the international activities of the organisation.

## MUST WORK FOR PRODUCTION.

There was only one way in which Australia could get greater production, and that was for someone to do the work, the Victorian Premier, Mr. McDonald, said during the week.

Mr. McDonald said that there were already too many committees saying what should be done, but refusing to set an example. They would be better engaged in

production because they were only keeping people out of it.

"We are not suffering from a dearth of planners, plotters and blue-printers," he said, "but we do seem to be having grievous trouble in getting people to put their ideas into effect. No one has yet discovered an effective substitute for work."

## QLD. REPRESENTATIVE FOR A. S. HORNE.

Mr. W. T. Phillips, who until recently was New South Wales country representative for A. S. Horne Ltd., glove manufacturers, of Prospect, South Australia, has transferred his activities to Brisbane. He has several agencies there and is now direct Queensland representative for A. S. Horne Ltd., for both industrial and fashion gloves. He is at Heindorff House, 171 Queen Street, Brisbane.

## ENGINEERING SCHOLARSHIP IS COMMENDABLE MOVE.

In an effort to encourage the entry into industry of highly skilled and capable craftsmen, the 20th Century Mechanical Exhibition of Melbourne introduced a worth-while technical scholarship.

The scholarship is valued at £200, tenable for a full-time diploma course in any branch of engineering in a senior technical school.

In this the board of management has had the co-operation and assistance of the principals of technical schools in Melbourne, particularly that at Caulfield.

Entries have closed and there has been an encouraging response from boys who are eager to ac-

cept engineering as a career. The course covers four years and £50 will be paid each successive year to the selected student.

It has been recognized for a long time that while there are many employers who deplore the dearth of expert and well-trained technicians and artisans, there are not many industrialists who are prepared to help to provide a pool of such craftsmen that would be of immeasurable benefit to the Australian industrial field.

So it is with a good deal of satisfaction that there has been at least this move toward that objective. It might serve as an inspiration and encouragement to wider and more concentrated efforts to give industry yet another drop in the reservoir of skilled and useful tradesmen.

## AUSTRALIAN TRADE FAIR SUGGESTED.

Mr. Neil Hopkins, chairman of the Export Development Group, recently suggested to the South Australian Chamber of Manufacturers, that an international trade fair should be held within the Commonwealth. Expressing himself as "profoundly impressed" by the British Industries Fair and the International Trade Fair at Chicago, Mr. Neil declared: "Trade organisations in Australia could stage an excellent exhibition which would attract buyers and tourists from the whole world. It should be an Australian-wide exhibition, rotating between the capitals."

The suggestion has everything to recommend it. Why not some such move as part of the 50th anniversary celebrations of the foundation of the Commonwealth?

## MANUFACTURING BUSINESS FOR SALE

Complete plant for the manufacture of Spokes and Nipples for Car, Motor Cycle and Bicycle Wheels, together with large stock of raw material, will be sold for fraction of value, as the space occupied by same is urgently wanted for other types of work.

An excellent opportunity to expand your present business or to commence in a new field, as there is definitely no opposition in Sydney and little elsewhere in Australia.

Orders on the books will go with the plant and every assistance will be given to purchaser to become established.

This is a genuine offer which will stand any investigation.

Further particulars from:

**H. C. GODDARD PTY. LTD.**  
106 Devonshire Street, Sydney. Phone: MA 7834.

## FACTORY SITE

OAKLEIGH, 420ft. x 99ft.

AUCTION, Thursday, November 2, at 3 p.m.  
on the land, KING STREET

One of the few remaining factory sites right in  
the centre of Oakleigh

**H. C. MITCHELL (late of Duncan & Weller)**

114A FORDHAM AVE., CAMBERWELL, VIC. WM 4540.

# H. ARENDSSEN & SONS PTY. LTD.

MALVERN VICTORIA

*Manufacturers*

TEL. U9231 5 LINES

## SHOE BUCKLES

In steel and brass, in all sizes.  
— big variety of designs —  
Finished in nickel, gilt, gun  
metal and brown.

## BELT BUCKLES

For the ladies and gent's Belt  
Trade — a big variety of designs  
supplied in all finishes; also for  
the ladies belt trade, a big  
selection of clasps and fashion  
accessories.

## HANDBAG FRAMES

Manufactured in brass and steel  
— finished in gilt or nickel.  
Hundreds of designs to choose  
from in a big variety of sizes.

## KIT BAG FRAMES

Manufactured from the best  
quality steel and finished in baked  
enamel — of great durability.  
Two patterns, side lock and top  
lock — are supplied in sizes 14in.,  
16in., 18in. and 20in.

## WRIST BAND BUCKLES

Manufactured in steel and brass  
in a number of patterns supplied  
in all sizes in gilt and nickel.

## GRINDERY HARDWARE

Complete range of harness  
buckles, snap hooks, bits, etc.  
**DEES and RINGS**  
in all sizes and gauges.

## METAL PHOTO FRAMES

A complete range of Metal Photo  
Frames in all popular sizes and  
finishes.

## CABINET HANDLES

An attractive range of handles  
for the furniture trade in nickel  
and Florentine bronze finishes.

**AROS** REGD.  
*Dependable*

**METAL**

**PRODUCTS**

NEW ZEALAND:  
F. C. Matthews & Sons  
Ltd.,  
Albert Chambers,  
32 Wellesley Street  
West, AUCKLAND.  
C.I. Phone: 48746.

SOUTH  
AUSTRALIA:  
J. P. Marcus Limited,  
Bower Buildings,  
19 Charles Street,  
ADELAIDE.  
Cent. 3281.

QUEENSLAND:  
Sydney G. Hughes,  
Invicta House,  
Cor. Edward and  
Elizabeth Streets,  
BRISBANE. B.15.  
B 7178.

WESTERN  
AUSTRALIA:  
C. R. Palmer Pty.  
Ltd.,  
75 King Street,  
PERTH.  
3 5420.

NEW SOUTH  
WALES:  
C. D. Tarant,  
101 York Street  
SYDNEY.  
5X 4233.

If you have difficulty in obtaining any of the above supplies contact H. ARENDSSEN & SONS PTY. LTD. or any of the above agents who will advise you of the nearest distributor or wholesaler.

FACTORY AND OFFICES SITUATED AT 1305 MALVERN ROAD, MALVERN, S.E.4, VICTORIA.

Our editorial representative in each State makes regular calls on manufacturers, but if YOU wish to see some particular phase of your business given publicity, communicate immediately with the Editor, and he will arrange for a representative to call.



# Around & About the FACTORY

A digest of new factory, and plant construction, additions, alterations and improvements, and operating news of Australian industry.



## Tapping Attachment has Good Features

### "Jay-Dee" High Speed Unit

The "Jay Dee" tapping attachment, claimed to be a revolutionary advancement in engineering practice, is a tool which should have more than usual appeal.

It is the outcome of a series of exhaustive tests for more than three years and, having reached the stage of what its manufacturers consider is the peak of perfection, is now on the market.

It has further claims of being the answer to the tapping problem.

Each unit incorporates a range of tapping sizes that should com-

pared to be the only movement necessary. The unit is equipped with a Master Collet, and adaptors for any make of tap can be supplied.

Centring the unit gives it rigidity from drive to tap centre, and this rigidity remains even at high speed, contributing to its efficiency. It is impossible, it is claimed, for lateral displacement to occur. The body is of high grade steel while all working parts are precision machined, specially hardened and ground.

The attachment has a wide working range and can be used with all types of machines equipped with reversible motion. It can be used for horizontal or vertical tapping, both for right and left-hand threads and in

blind or through holes. It is well suited for stud driving.

The "Jay-Dee" incorporates an ingenious "index station", used to indicate appropriate tap-driving pressures. Overloading, the makers say, is impossible, and the unit is fitted with a permanent stop to safeguard the attachment—and the job as well—from possible danger. There are no springs. Power is generated by a resiliently displaced material and energy is stored and released without appreciable fatigue.

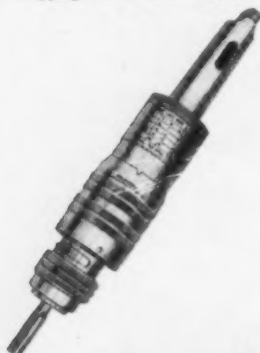
Maintenance is claimed to be simple. It constitutes recharging with lubricant every three months and no tools are required for this simple process. It is also said that the unit possesses lasting qualities that should carry with it a strong appeal to engineers and other users.

The "Jay-Dee" is manufactured by John S. Thompson (Industries) Ltd., Greenock, Scotland, and the agent for the factory in Australia is Norman N. MacLeod, 123-5 William Street, Melbourne.

ing out perfectly toasted sandwiches, savouries or sweets in the simplest fashion. It may be used with any type of heat whatever: whether gas, fuel, electric or pressure stove—or out in the open at picnics. The "Toastie" is fitted with extra long handles, so that it may be held with perfect safety over a wood fire.

Another Ess-Goods line, the "Wonder" hose coupling, is a new idea for the quick repair and easy joining of garden hose lengths. Made of rustproof metal, it consists of two rings and a tapered spiral tube screw fitting. The simple operation of joining two lengths of hose, without tools, takes only a few moments.

For hose couplings, curtain rod spear-ends, robe hooks, turn-buttons and pressure toasters, the Ess-Goods output is handled in all States by Johnson & Gaston Pty. Ltd. For toy wheels, Johnson & Gaston are the representatives in Queensland and W.A.; Ess-Goods themselves handle S.A.; P. W. Fowler handles N.S.W.; and Bruce Hubble handles Victoria. In the case of wing-nuts, Johnson & Gaston are the representatives for Victoria and Tasmania, while in the remainder of the Commonwealth, distribution is looked after by Stanfield Smith, Divett Street, Port Adelaide.



Speed, combined with simplicity, is a feature of this tapping attachment.

mend itself strongly. Particularly designed for use with standard hand taps, the "Jay Dee" is a streamlined precision tool and with the added advantage that the operator has an unobstructed view of the tap when centring and when in operation. Care has been taken in its design to eliminate external projections, so reducing to a minimum the possibility of accident to the job in hand or the operator himself.

Speed, combined with simplicity, is another feature. The time of changing from one size to another has been clocked at five seconds. A flick of the hand is

## Useful Metal Products of Quality by "Ess-Goods," Beverley, S.A.

A metal goods manufacturing firm which has gained a reputation for quality as well as ingenuity in its useful range of lines is the business known simply as Ess-Goods, of Howard Road, Beverley, South Australia.

This is a partnership of two brothers, Tom and Arthur Sellick, who make that happy division of responsibility common in such cases wherein one—Tom—takes primary charge of the engineering side and the other—Arthur—of the business side. Their brand name is a modest masking of the initial letter of their surname.

A basic line from this factory and one for which Ess-Goods have long enjoyed a good name is a wide range of toy wheels, from six-inch rubber-tyred wheels down to the tiny 1/16 in. diameter die-cast type. One recent popular application of their wheels has been on clothes-basket carriers.

Then there are several lines which enter into that well-known modern industrial category of

"small but important trifles", including curtain rod spear-ends, robe hooks and turn-buttons. Our representative was informed that it is doubtful whether die-cast turn-buttons or spear-ends other than those from this Beverley, S.A., plant are made in Australia; and the claim was made that they are more than comparable with anything produced in other materials at the price. Still another "mighty midget" from Ess-Goods is the wing-nut which like the other items mentioned enjoys a distribution throughout Australia.

Sub-contract diecasting is quite a major phase of the business conducted by the Sellick brothers, and in this direction they perform work regularly for several large South Australian engineering firms, including motor body-builders, fastener producers and others.

The "Toastie" toaster, latest speciality by Ess-Goods, is an excellent pressure toaster for turn-

## Automatic Lubricators

N.S.W. Distribution by  
Manufacturer's Equipment Company

Equipment in these days is so costly, so complex, and so difficult to procure that the maximum of skill and attention are devoted to its maintenance, special efforts being expended to ensure that it is free from dirt and grit, that it is aligned correctly, and, perhaps most important of all, that it is lubricated effectively.

Recent years have seen the placing of increasing emphasis on lubrication, lubrication that is thorough, dependable, and free from the risks and inaccuracies inevitably associated with manual operation.

The modern trend, in other words, is distinctly towards the automatic lubricator, the lubricator which is designed and engineered to operate independently of the human factor.



## PAINTING YOUR FACTORY?

Do it with this PORTABLE SPRAY PAINT UNIT



- Many have saved initial cost and valuable time.
- Will handle all finishing materials.
- Special nozzle for ceilings and floors included.

This is a "REILAX" Unit.

Weight — 42 lbs.

**SIMPSON AGENCIES PTY. LTD., 34 Little Latrobe Street, Melbourne, Victoria**

Representatives for Victoria and Tasmania. FJ 4444.

24/H.P.19

*Glass Fibre Insulated Wire*

High Insulation Resistance . . . High Dielectric  
Strength . . . Non-Hygroscopic . . . Heat Resisting  
and Flame Proof.



Apply for  
samples and  
make your  
own tests.

# LEWCOGLASS

**THE LIVERPOOL ELECTRIC CABLE CO. LTD.**

INCORPORATED IN ENGLAND

190 CLARENCE STREET, SYDNEY—586 BOURKE STREET, MELBOURNE

ADELAIDE ..... Robert C. Forbes & Co., 30a Currie St.  
BRISBANE ..... Intercolonial Boring Co. Ltd., 460 Ann St.  
HOBART ..... Wm. L. Buckland Pty. Ltd., 57 Liverpool St.

LAUNCESTON ..... Wm. L. Buckland Pty. Ltd., 38 Charles St.  
NEWCASTLE ..... P. W. Seddington & Sons Pty. Ltd., 33 Watt St.  
PERTH ..... R. P. McInerney & Co. Pty. Ltd., 401 Murray St.





**FIGURE NO 742**

**JOHN "NKL" (U.S.) GLOBE VALVE**

For Saturated STEAM at 250 lbs. per sq. inch and WATER, OIL or AIR at 350 lbs. per sq. inch.

**JOHN**

**M.B. JOHN LIMITED**  
BALLARAT - VICTORIA  
AUSTRALIA

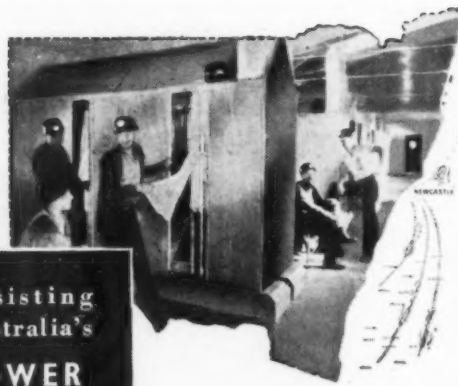
TRADE  MARK

MAKERS OF THE LARGEST RANGE OF VALVES AND FITTINGS IN AUSTRALIA

ILLUSTRATED above is one of the large range of JOHN Valves and Fittings for use with STEAM, WATER, OIL, CHEMICAL, AIR and GAS Services of high, medium or low pressures and temperatures.

FULL PARTICULARS supplied on request

Assisting  
Australia's  
**POWER  
LIGHT  
and HEAT**



Here is a typical example of how the Brownbult Sydney Plant assists the national needs of the Coal Board by supplying many large installations of Lockers for the mines. The dirty, wet clothes of miners coming off shift are put into Lockers heated with steam ducts and they are dry by the time they come on the next

shift. A compartment is also provided for each miner's other clothes and personal effects. In all spheres of industry Brownbult installations are found as behind-the-scenes essentials which assist management to higher levels of personnel efficiency and production control. Although steel shortages and national needs preclude short-term deliveries in most lines, the interests of customers are protected by steel importations and by constantly increasing facilities at Brownbult Plants.

**SERVING  
THE  
NATION**



E. T. BROWN LTD., Brownbult Steel Equipment Co. (Reg.), 14-24 Alexandra Parade, Clifton Hill, Victoria. 17 Castlereagh Street, Sydney, N.S.W.  
Representatives in all other States.

An interesting example of this type of mechanism is the "Tecalmit Brentford" mechanical lubricator, which has been so designed that it ensures an adequate and fresh supply of lubricant under pressure to every bearing and to every working part at pre-determined regular intervals. The human element and the disadvantages of gravity feeds are thereby entirely eliminated.

This "Tecalmit Brentford" mechanical lubricator is available in designs to suit individual machines. Its installation is an insurance against breakdowns, frequent overhauls, expensive hold-ups, and high maintenance costs.

Another important apparatus is the "Tecalmit" radial mechanical lubricating pump. This scientifically designed unit guarantees that the correct quantity of fresh grease is supplied to from one to twenty points at pre-determined intervals. The system is completely automatic, the pump normally being operated from a rotating member of the machine. This radial lubricating pump is suitable for use on a wide diversity of installations, including centrifugal pumps, stone crushers, rolling mills, overhead

cranes, mixing plants, escalators, and kindred equipment.

The New South Wales distributors for the apparatus herein briefly described are Manufacturer's Equipment Company (a Division of Westcott, Hazell and Co. Ltd.), 280 Castlereagh Street,

## "Zefa" All-Purpose Sprayer

Manufactured by Sydney Firm

An efficient, easily-operated sprayer is an indispensable item in the factory, the garden, and the home. In each of these places it is called upon to do a multiplicity of jobs—from the spraying of colours, the spraying of springs, the cleaning of engines, the spraying of plants, to the injection of borer liquids.

In order that these varying jobs may be executed with thoroughness and efficiency, a sprayer must be specialised in design, strong in construction, and readily adaptable to the different jobs and circumstances with which it will be called upon to cope.

Sydney, who invite interested industrialists to contact them for detailed information regarding the wide range of manual and mechanical, air and electrically operated semi- and full-automatic "Tecalmit" lubricating systems.

Each of these essential features is incorporated in the "Zefa" all-purpose spray manufactured by Perfix Pty. Ltd., 120 Pacific Highway, North Sydney, New South Wales. This sprayer is of positive action—not air pressure.

Main interest centres on the fact that it requires only one hand for its operation, which is effected by easy trigger pressure. This means that the other hand is free to so move the object being sprayed as to ensure that every part will be treated adequately.

The "Zefa" possesses the following important advantages:

- (1) The gun is constructed of non-ferrous metals.
- (2) It is easy to clean, this being done by simply pumping through the gun water or cleaning fluid.
- (3) The pressure is positive.
- (4) Multi-directional nozzle sprays in all directions.
- (5) Finely atomised "mist" covers all the surface.

The "Zefa" sprayer has a variety of operations in the factory, the workshop, and the garage. For example, it can be used for engine cleaning; for loosening rusted parts; for spraying springs, inks, commercial colours, and stencils; and for deodorant spraying. It does all these jobs with a high measure of efficiency because direct positive pressure forces the fluid into crevices, springs, etc. By removing the atomiser, moreover, a fine straight jet of oil can be ejected with considerable pressure.

The "Zefa" is not only simple in operation; it is also easy to clean. This is done by the mere pumping of water or fluid through the gun.

Of special significance is the fact that this sprayer can be converted readily into an efficient in-

strument for the injection of boiler liquids. This is done by attaching the special injector which is supplied by the makers at a slight extra cost.

It is claimed for the "Zefa" that it is the only sprayer with (1) detachable glass jar; (2) one hand operation; (3) multiple direction nozzle; and (4) multi-purpose functions.

The solidity of the "Zefa" sprayer, allied to the fact that it is constructed of non-ferrous metals, ensures high operating efficiency and low maintenance costs.

### Electro-Rail is New Power-Tap Device Unit Saves Industry New Electrical Installations

The electro-rail is a new device which is of considerable value to many types of factories. It is a prefabricated electrical installation, made in 10-ft. lengths. Each length has two brackets, with screw connections. Any number of lengths can be erected and joined up until the full capacity of the rail has been reached.

A factory worker using a power-operated machine can then plug in throughout the entire length of the rail at any number of points.

The rail has a 60 and 100 amp. capacity, and the take-off points or fixed plugs a 5 and 10 amp. capacity.

A trolley can travel the entire length of the electro-rail, picking up the current as it travels.

The device is applicable to any moving appliances, such as hoists, cranes, or conveyor belts. Clothing manufacturers particularly will find it worthy of their attention. It has big advantages in factories where there are numerous sewing machines, for the motors can be plugged in conveniently anywhere along the line of the electro-rail.

The rail is light in weight and rigid. The 10-ft. length weighs 8-lb. Because of this lightness and ease in handling, one man can do the whole installation for a factory. Once the rail is put up, it does not require any more electrical installation, because anywhere the operator plugs in he can tap the power supply. It is equally simple to shift a machine. All that has to be done is to take the plug off the rail and put it at the new location. Factories can thus save a considerable amount of expenditure by avoiding new electrical installations.

Any changes in factory lay-out can be done immediately and free of cost.

The makers of the electro-rail are Gemco Pty. Ltd., 76 Bay Street, Ultimo, Sydney. The distributing agents are Jacoby Mitchell and Co. Pty. Ltd., 477-481 Kent Street, Sydney. Gemco claims to be the first firm in the British Empire to make the rail, which has been accepted by the Australian Standards' Association. The agents say it can be installed anywhere in Australia, with fairly prompt delivery.

overhead



vertical



underwater



around corners



PHILIPS

C18 ELECTRODE

**Contact**

welds in all positions

#### NOTE THESE ADVANTAGES

- Cannot freeze.
- Three times faster than ordinary electrodes.
- Spot welds.
- Can be bent into any shape.
- Ignites automatically on contact with work.
- Requires little skill to operate.

Philips Contact Electrode C18 is a shielded arc electrode specially designed to make welding easy and fast in any position. The trade has been quick to realise the C18's advantages and it has been approved by Lloyd's Register of Shipping for welding in ALL positions.

Exact proportioning of powdered metal in the coating makes it sufficiently conductive to ignite when the electrode touches work. The C18 Electrode is the only touch welding electrode suitable for welding in all positions.



Throughout the world this symbol guides the choice of millions.

**PHILIPS** C18 ELECTRODE

Available only from:

PHILIPS ELECTRICAL INDUSTRIES OF AUSTRALIA PTY. LTD.

Sydney • Melbourne • Brisbane • Adelaide • Perth

PV5-55

**Industrial Diamonds  
GUTWIRTH & SONS  
PTY. LTD.**

368 Collins Street, Melbourne  
P.O. Box 980, G.P.O. Tel.: MU 8118

**NONPORITE** PTY. LTD.  
292-6 BURWOOD RD.,  
HAWTHORN, E.2, VIC.  
Telephones: Haw. 5801-2, 801.



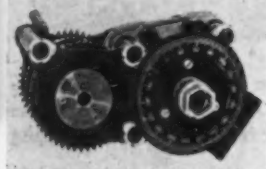
AGENTS  
ALL  
CAPITAL  
CITIES  
SEE  
TELEPHONE  
DIRECTORY



YOU WANT TO KNOW . . . and the editors will gladly tell you . . . more about the inventions, materials, and processes mentioned on this page. Write to Box 1687, G.P.O., SYDNEY, enclosing a stamped, self-addressed envelope.

## Autoselector Mechanism Has Remote Control

The new automatic turning and selecting mechanism, illustrated, is used to turn shafts repeatedly to pre-set positions with speed and accuracy. Automatic electrical remote control is employed, and the setting accuracy is stated to be such that the positions selected never differ by more than  $\pm 0.050$  deg. from those which have been pre-set in the mechanism. This accuracy remains constant with different operators, speeds of



Autoselector for setting shafts automatically to any one of 11 pre-determined positions.

operation, or other varying conditions.

These new mechanisms have a wide field of application both in radio engineering and in industry. For example, they enable the frequencies of radio transmitters and receivers to be speedily and accurately selected, and in industry they may be usefully employed where extremely accurate machine tool operations must be frequently repeated, for example, on lathes and grinding machines. The speed of operation of a series of autoselectors is such that, using small transmitters, the system reaches the required setting within 2 seconds of the operation of the selector switch. Using large transmitters, the setting time is less than 10 seconds.

Two types of autoselectors are

at present available. These are similar in design but are of different capacities. The small type, SZT.101, which can transmit a maximum torque of 2.4 lb.-in., is intended for small apparatus, and it can stop a shaft in any one of 12 pre-set positions. The large type, SZT.102, shown in the accompanying illustration, will transmit a maximum torque of 12 lb.-in., and the shaft can be stopped in any one of 11 pre-set positions. In addition, facilities are provided on this unit for manual adjustment of the controlled spindle. It is stated that autoselectors capable of transmitting

a maximum torque of 80 lb.-in. will be available in the near future. The diameter of the dial on the type SZT.102 unit is 2½-in.

The pre-set positions can be chosen at will and may be changed at any time, and combinations of autoselectors may be driven by small electric motors. In such arrangements, after a new position has been selected remotely, the motor rotates the autoselector combination until the controlled spindles have, one by one, reached the positions required, whereupon the motor is automatically switched off. On account of their small size and the fact that their application does not necessitate any change of internal design, these autoselectors can readily be incorporated in many existing types of equipment. [2602].

## Bar and Tube Marking Machine

Shown in the accompanying illustration is a bar and tube marking machine recently developed, to provide a rapid means of making identifying markings along the lengths of round, square, hexagonal, and other types of bars and on tubes and structural or extruded sections. It has a capacity ranging from ½-in. to 3½-in. diameter, or equivalent, for solid sections, and up to 6-in. square for tubular and fabricated sections.

The material passes between a pair of air-loaded feed rolls and a centre marking roll carried on the vertically moving head, and a set of driven support rolls on the machine base. The entire head is lowered to the work pneumatically, air being admitted to the cylinder through a foot operated valve. The pneumatic system operates on a supply line pressure of 75 to 150 lb. per square in., and a hand-operated reducing valve is provided so that

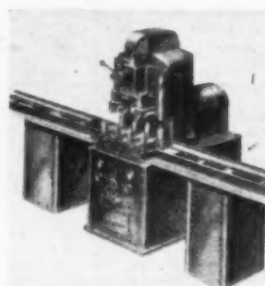
the pressure on the marking rolls can be varied to suit the depth of indentation required. The vertical position of the feed and marking rolls can be adjusted to suit the thickness of the material, by means of a star-wheel on the front of the slide, while four pairs of vertical rollers, each provided with a turnbuckle adjusting screw, are fitted to centralize and guide the work transversely.

Drive to the machine is by a 3 h.p. motor through a variable speed unit, which provides for a maximum bar speed of 220 ft. per minute. Speed control is by a handwheel at the front of the machine base, and reversing push-buttons are provided for the motor, so that the work can be fed from either end of the machine.

The 3½-in. diameter marking and feed rolls enable work to be marked continuously or at desired intervals up to approximately 10-in. pitch, and work can be marked on opposite sides by

the use of a lower marking roll. The rolls can be readily changed when an alteration of the identifying symbol is required, and denomination, knurl-type, rolls, with interchangeable type or dies can be supplied.

The loading height of the machine is 2 ft. 9 in. and feed and discharge conveyors, extending



Bar and tube machine for identification marking.

from 10 to 16 ft. on either side of the machine can be supplied. The floor space occupied by the machine is 2 ft. 8 in. by 4 ft. 3 in. [2583].

## Soluble Cutting Oils for Drilling

A report recently issued gives the results of tests made to compare the performance of eleven well-known soluble cutting oils at both the makers' recommended dilutions and a dilution of 1:25.

The drills used in the tests were specially made to ensure uniformity of material and shape, and drill point grinding was car-

(Turn to page 24.)

# VICKERS DETROIT BALANCED HYDRAULIC (OIL) PUMPS

Small Series: Intermediate Series: Large Series.

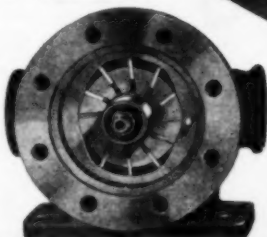
## Rotary Vane Pumps

Capacities:—1 G.P.M. to 50 G.P.M. at any pressures up to 1,000 lbs. per sq. in.

The Compact, Reliable and Economical Pressure Source for

Oil Hydraulic Control Systems . . . Road Building and Maintenance Equipment . . . Truck and Bus Power Steering . . . Tractor and Construction Applications. Hydraulic Presses and Machine Tool Actuation.

Why Vickers balanced vane type rotary pumps are better pumps — because of the patented "Hydraulic Balance" construction and because of the simple alloy steel parts employed.



Vickers-Detroit Oil Hydraulic Pumps and Controls are manufactured in Australia by the sole licensee:—



Small series foot mounted single stage vane pump.



Intermediate series flange mounted single stage vane pump.

Distributors in New South Wales: C. S. Archer Pty. Ltd., Stanmore, Sydney, N.S.W.

**INDUSTRIAL SERVICE ENGINEERS PTY. LTD.**  
ASHLEY STREET, BRAYBROOK, VICTORIA, AUSTRALIA

# "Aberdeen" CANVAS GOODS FOR INDUSTRY

Just as clothes protect a man, canvas protects Australian Industry, and for over 56 years we have been manufacturing all types of canvas goods for industrial and domestic needs. We are in a position to meet all your canvas requirements, and if you have any special problems or applications we will be glad to help. Write or 'phone Industrial Dept., 33 Regent Street, Sydney.

- Tarpaulins
- Machinery Covers
- Welding Screens
- Canvas Curtains
- Conveyor Belts
- Chairs, Tables, Marquees, etc., for any functions can be hired.

WRITE, CALL OR PHONE

**SMITH COPELAND & CO. PTY. LTD.**

33 REGENT STREET, SYDNEY. TELEPHONES: M 4181-2-3.

Makers of *Finer Blinds and Canvas Goods* for over 56 Years

INTERSTATE REPRESENTATIVES:

R. C. Kaderes,  
Launceston, Tas.

J. Davidson & Co.,  
Adelaide, S.A.

Gibbs, Bright & Co.,  
Melbourne, Vic.

Parbury, Heenty & Co. Pty.  
Ltd., Brisbane, Qld.

A. J. Rigg & Sons,  
Perth, W.A.





## THE "RC-65"

**It compounds! It extrudes! It colours!  
It reclaims scrap!**

The new RC-65 Twin Screw Extruder is one further step in the range of R. H. Windsor's plastics extrusion equipment. This new unit has 3.5in. worms and a capacity of 65 pounds an hour.

The RC-65 is designed to give perfect mixing, plasticizing, compounding, colouring and pelletizing. Also, operating costs are low, as are the power costs! Mono-filaments from .010in. to tubes, strips and specially extruded sections 10in. in diameter can be handled by this unit, which has been built to American standards of performance.

Soon available will be the RC-100 Twin Screw Extruder with 4.3in. worms, and a capacity of 100 lbs. per hour, to be followed by the RC-200 Triple Screw Extruder having 4.7in. worms and 200 pounds per hour capacity.

Details available from

**SWIFT**  
**AND COMPANY LIMITED**

26-30 CLARENCE ST., SYDNEY. BX1831

And at Melbourne, Brisbane, Adelaide and Perth. Also Wellington and Auckland, New Zealand.

## ROPE MAKERS—THIS IS FOR YOU



Several of the leading rope and cordage manufacturers in Australia are now using Fischer and Porter FLOWRATOR Meters in the emulsion treatment of fibres.

Too much emulsion—soggy fibres.

Too little—Stringy fibres.

FLOWRATOR Meters measure exactly the rate of Feed. The meters are simple and can be steam heated if required. Any meter can be calibrated for several different fluids.

Made in Australia.



FISCHER & PORTER CO.

133 KING ST.

MELBOURNE

N.S.W.: H. G. THORNTHWAITE & CO.

ried out on a drill grinder modified to provide the necessary accuracy.

Drilling tests were conducted with each cutting oil using a rectangular frame drilling machine, and the workpieces were clamped to the table of an electrical dynamometer.

The following steels were drilled using each oil: carbon case-hardening steel En 32A, "55" carbon 0.75 per cent. nickel steel, En 10, heat-treated to 55 tons per sq. in., and 4.25 per cent. nickel-chromium-molybdenum steel, En 30B.

Four drill life tests were made with two emulsions of each oil, using drills taken at random from a group of nine. Test procedure consisted of drilling holes to a depth of 11 in. until the drill failed, drill life being expressed as the number of holes drilled before

failure. Four gallons of fluid per minute were supplied through a circular distributor.

None of the soluble oils gave a consistently good performance on all the steels. Four soluble oils at various dilutions were superior to the others when drilling steel En 32A. Four oils at a dilution of 1:25, one at a dilution of 1:20, and one at a dilution of 1:35, gave the best results on steel En 10. Five oils at different dilutions were clearly superior to the remainder when drilling steel En 30B.

Charts in the report show the order of performance of the oils based on average drill life, and photographs show typical flank wear on drills used for steels En 32A, En 10, and En 30B, and typical build-up on the lands of drills which had been used on steel En 10. [2572].

## Down Time and Its Causes Recorded

A new device for recording of machine operation which can give mill men a minute-to-minute diagrammatical picture of mill operations is in production, which device is applicable to most types of textile machines, continuously and automatically records on a central recording apparatus all running and stopping times of the machine under supervision. It goes a step further by recording the particular reason for all stoppages.

Stoppages of the machine are recorded by electrical contacts and automatically transmitted by connecting wiring to a continuously moving chart in the recording unit. The running time of the machine is represented as a black line on the graph, which

has an hour scale and shows the number of each machine. Stoppages are shown as blank spaces or breaks in the running-time line. A telephone-type dial mounted on each machine permits operators, by dialling a single digit automatically to record a code number against the blank space in the diagram on the recorder to denote the reason for the stoppage.

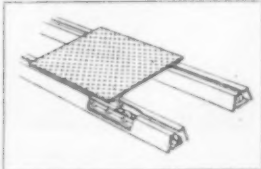
Use of the device permits mill operators to keep a close check on the results of various changes which have been made—changes in humidity, sizes, etc. Analysis of the chart also tells the major reasons for stoppages and permits mill operators to take corrective steps to reduce the most frequently occurring stoppage causes. [2607].



## Roll-Race Conveyor Requires Less Power

Operating on the same principle as a roller bearing, the roll-race conveyor, illustrated, comprises a load-carrying belt or slat system running upon a series of rollers, in such a way that each slat is at any time running over at least six rollers. Belt or slat member may be power-driven.

The rollers are from 1½ in. to 3 in. diameter and are linked together by flexible connecting members, so that installations can be designed for going round 90 deg. or 180 deg. corners or as endless belts. The dead load on the platform is transferred directly through the rollers to the bed or track, which may be set flush with the floor, and there is no load on the pins of rollers. The load capacity of the conveyor is therefore governed by the crushing strength of the rollers.



Claimed to be from five to twelve times as efficient as the normal type of heavy-duty conveyor, this conveyor features a free-running roller chain which carries the load platform.

It is claimed that this type of conveyor will operate with one-fifth to one-twelfth of the power required for the normal heavy-duty conveyor, or else operate with the same power over five to twelve times the length or with the same ratios of increased load.

When the conveyor is designed as an endless belt, and load bearing on the return, the universally jointed roller chains are taken outside the belt at the end of the span and brought in under the belt for the return. In this way the slats can be kept horizontal during the complete circuit.

The conveyor can be designed to obtain a local increase or decrease in speed, the slats being independent of each other and the roller chains driven.

Life of the load-carrying member is considerably increased in this form of conveyor, as the tension in the belt or slats is reduced in proportion to the power required to drive the unit. [2629].

**SPECIAL NOTICE TO READERS**  
To receive prompt attention, address all inquiries to Box 1687, G.P.O., Sydney.

## how to seal LEAKS and DEFECTS

at only 354°F—avoiding all the dangers of HIGH HEAT

At long last you can save many of those defective castings that would normally be tossed out.

New EutecRod 15 (torch) will give you complete safety because it bonds at the low heat of 354-600 F. No cracking or distortion . . . even on the thinnest sections.

Already in America EutecRod 15 has saved thousands of machined castings. Now import difficulties have been eased, you can enjoy the same advantages . . . first stocks of 15 have already arrived.

Write or ring for complete free demonstration (mention this advertisement)



This CRACKED CYLINDER HEAD was salvaged without any preheating. EutecRod 15 was applied at only 354°F.

Only one of hundreds of case histories we have at the office. In short, you must really see EutecRod 15 to believe it!

EUTECROD 15: these are the properties you've been looking for.

This is a white metal alloy. The deposited metal is able to withstand a pressure of more than 1,140 p.s.i. and will bond to cast iron at 354-600° F. with a remelting temperature of 760° F. Welds made with this alloy are absolutely watertight under pressure and can be scraped, polished and machined. It forms a perfect base for babbitt metal or iron and bronze bearings; it has excellent affinity for cast iron.

Eutectic are now making over 100 special alloys for every conceivable welding job. Each possessing advantages never before found . . . making possible huge savings in time, money and effort.

Ring or write us to-day for your complete "obligation free" demonstration. Make us prove all the claims we make for Eutectic.



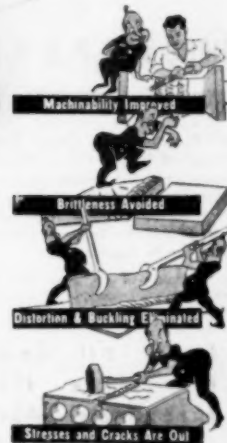
Sole Australian Eutectic Distributors:

SYDNEY MELBOURNE ADELAIDE  
513 Wattle Street, 48-50 Gipps Street, 112 Franklin Street,  
Broadway, M 6811, Collingwood, JA 5416, Cent. 7060.

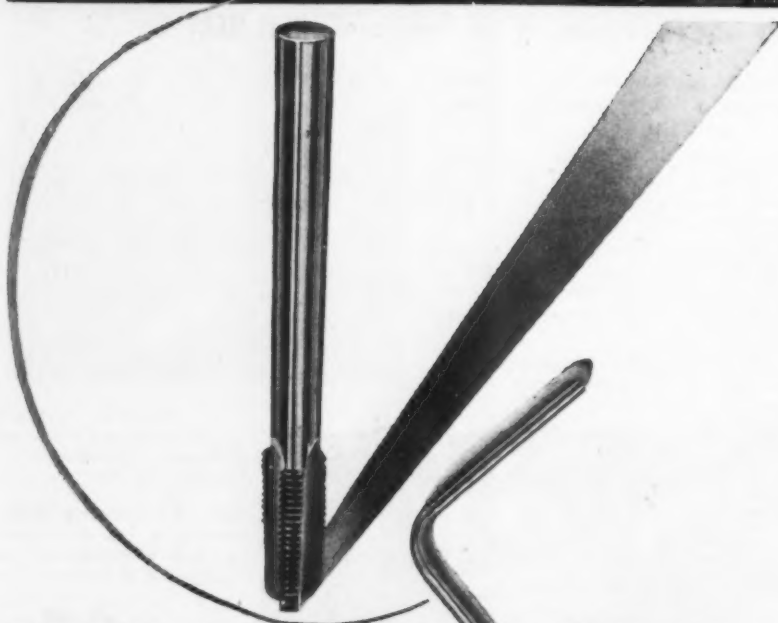
BRISBANE  
752 Ann Street,  
The Valley, L 1497.

LAUNCESTON  
89 Charles Street,  
Laun. 2086

# Westcott Hazell Engineering & Steel Ltd.



*"Give Us the Tools and We Will Finish the Job"*



**HERE ARE P & N H.S.S. CUT THREAD MACHINE TAPS**  
*that give accurate "finish" as well...*

All P. & N. High Speed Steel Machine Taps are made to British Standard Grade 1 Cut Thread Tolerances\* and are guaranteed to have leads and shanks concentric with the thread. A production run with P. & N. Machine Taps will give you first-hand proof of their high accuracy and stamina for tapping at greater speeds, for lasting longer and for tapping more holes between regrinds—all of which adds up to lower costs.

\* Examples—on  $\frac{1}{16}$  in. Whit. M/c Tap total tolerance (maximum-minimum size on effective diameter) is .0016 in.; on  $\frac{1}{8}$  in. Whit., .0020 in.; on  $\frac{1}{4}$  in. Whit., .0023 in.

**From all Leading  
Hardware Houses  
throughout Australia**



**PATIENCE & NICHOLSON LTD., MARYBOROUGH, VICTORIA**

*Sales and Technical Service—375 BOURKE STREET, MELBOURNE, VIC.*

## Megohm Meter Maintains Constant Source Voltage

The new megohm meter, illustrated, features an internal circuit designed to assure the user that the applied voltage is equal to the specified voltage as long as the resistance of the piece under test is within the range of the meter. Resistance tests may be conducted with a known voltage.

Two models are available in this meter. One contains an internal 500 v. measuring source, together with a 200 v. source. The



Two models of this new megohm meter are being produced.

other model is equipped with a continuously variable measuring source ranging from 100 to 600 v. d.c. A volt meter is provided for checking actual voltage being applied to test. This second unit is designed to test for resistance changes as the voltage is varied.

The manufacturer intends these meters for production as well as laboratory work. Inclined control panels with specially designed meters and control markings are claimed to facilitate accurate, rapid readings. Two models similar to those listed above are available for applications which require a single constant-voltage test current. Within a given outside current resistance range, these instruments will compensate for external changes and hold the output voltage constant. [2627].

## Fine Wire Produced Electrochemically

A new method of making fine wire has been developed by which scientists have produced 0.00015-in. diameter wire in the laboratory. The process consists of passing wire through a chemical bath in which an electric current is flowing. The wire acts as an electrode, the surface being polished away and the metal dissolved until the desired size is obtained. One application of such fine wire may be in the production of smaller, more compact electronic equipment. [2670].

## HARD CHROME PLATING for Building Up DIES, GAUGES, SHAFTS

Woodward & Thurston Pty. Ltd.

308 St. John's Road, GLEBE  
SYDNEY, N.S.W.

Phone: MW 8871 (3 Lines).

THURSDAY, 9th NOVEMBER  
at 10.30 a.m.

SALE BY AUCTION ON  
THE PREMISES

BALACLAVA STREET  
WOOLLOONGABBA, BRISBANE  
Near Fiveways—off Ipswich Road

(Due to the sale of the premises, the  
complete stock and plant will be sold)

BLACKSMITH PLANT—AVERY PLATFORM  
SCALES—ELECTRIC MOTORS—ENAMEL  
BATHS—CORRUGATED ALUMINIUM  
ROOFING—BARB WIRE

Comprising

BLACKSMITH PLANT: Power Trip  
Hammers and Anvils; Wire Testing  
Machine; Power Screwing, Cutting, Drilling  
Machines; Lathes; Forges; Blowers; Anvils;  
Wrenches; Vices; Plate Steel; Fence  
Dropper Machines; Mixing Machines; 4  
sets Avery Platform Scales, 4-10 and 20  
cwt; Kibble Mill with 15 H.P. Motor and  
Spare Rollers; Extensive Steel Shuffling  
with Pulleys; Grain Conveyor; Reduction  
Gear with 15 H.P. Motor; separate 15  
H.P. Motor; 160 Tent Poles; Mobile  
Elevator with 2 H.P. Motor; 100 rolls  
Metal Building Fabric; 50 coils 12½ g.  
Barb Wire; assorted Pipe Flanges; 36  
pairs of Casements; 25 Rotary Pumps; 12  
Butt Hinges; 18 cases Messers Saucepans  
Sets; Inter-house Speaking System; Stocks  
and Dies; Sewing Machine for Corn Sack  
Repair; Gas Masks; Wood and Iron Beds;  
Bag Elevator; large assortment Tinware  
and Sundries.

Further lists being prepared.

Details of any item on application.

INSPECTION DAYS: 6th, 6th, 7th and 8th  
NOVEMBER, from 8 a.m. to 5 p.m.

**SHARP & MUSGRAVE**

Auctioneers

327/331 QUEEN STREET, BRISBANE

## SCHUMACHER

### FILTER

for  
Compressed Air  
Water  
Gases  
Acids

### INDUSTRIAL POROUS CERAMICS

for  
Aeration, Diffusion,  
Filtration, Electrolysis.

Australian Representative:

**C. B. RAETZ**

107 Blawarra Road, Marrickville,  
N.S.W. Tel.: LM 3079.

## High-Frequency Concrete Vibrator

Applied electro-magnetics has  
solved a fundamental problem in  
concrete technology. The in-  
creasing use of pre-cast concrete  
for mass-produced housing com-  
ponents, etc., depends on effi-  
ciently consolidating by vibration  
a harsh mass of cement contain-  
ing little water.

Research has shown that the  
best results are obtained from  
vibrating mixes of this type at  
6,000 cycles a minute. Mechanical  
equipment for the purpose has  
suffered from certain defects: belts,  
cams, motors and other parts of  
rotary equipment are liable to  
cause difficulty and even to breakdown.  
Furthermore, maintenance costs are high.

Non-rotary, low - maintenance  
vibration equipment has been  
evolved, after much research and  
design development, which is  
based on the application of  
electro-magnetic waves. Various  
different models exist (e.g., for  
manual, and experimental use)  
but the basic underlying principles  
of them all can be under-  
stood from the industrial version.

A table 10 ft. square (3m. by  
3m.) floats on heavy steel springs.  
The latter are especially con-  
structed to react in resonance  
with impulses from powerful  
electro-magnets. When a suitably  
adjusted current is applied to the  
magnets, the springs open and  
close, thus imparting 6,000 vibra-  
tions per minute to the table  
they support.

The load to be treated is placed  
on the table, and the mould  
rigidly clamped on to it. Current  
is turned on, consolidation occurs.

It is stated that this method  
simplifies production by lessening  
shrinkage in curing, and facilitat-  
ing mould stripping; the end  
product shows superior resist-  
ance to cold and weather, among  
other advantages. [2533].

## Testing Ball Bearing Lubricants at Low Temperature

A compact, semi-portable device  
for low-temperature testing of ball  
bearing lubricants has been de-  
veloped. In this connection it is  
pointed out that lubricants for  
ball bearings in such equipment  
as aircraft gun turrets must re-  
main effective at temperatures  
down to 65 deg. below zero.

The device comprises an inner  
and an outer chamber, between  
which dry ice is placed. For  
testing, a ball bearing is placed on  
a spindle in the inner bucket and  
rotated by a small motor.

The tendency of the outer race  
of the ball bearing to move with  
the inner race is measured by a  
strain gauge. If a lubricant un-  
der test thickens in the cold atmo-  
sphere, the inner ring will turn  
less freely and the gauge will  
register a greater strain in the  
outer ring. [2573].

# DURHAM ULTROX ZINC OXIDE

AN ENTIRELY NEW TYPE OF ZINC OXIDE  
DEVELOPED SPECIFICALLY FOR THE  
AUSTRALIAN PAINT INDUSTRY

For Exterior Paints giving:

- HIGH CHALKING RESISTANCE
- HIGH REDUCING POWER
- EXCELLENT COLOUR
- GOOD STORAGE PROPERTIES

The Ultimate Zinc Oxide for  
Australian Conditions

**DURHAM CHEMICALS  
AUSTRALIA PTY. LTD.**

58-68 OLD BOTANY ROAD

MASCOT

SYDNEY

N.S.W.



Comfortable executive offices and a well-planned factory area lie behind this attractive frontage in Princes Highway, Arncliffe, N.S.W.

## Custom Moulding In Plastics

### N.S.W. Company Demonstrate Their Capacity in This Field

In analysing the "success story" of any manufacturing organisation of consequence, it is usually possible at the outset to seize on some phase of the company's production and say with certainty that therein lies the secret of their advantage over competitors. It cannot be denied that some such pronounced feature must exist in the policy of a manufacturing company that is to last and prosper.

THE unprecedented demand for consumer goods in recent years has bought in its train newly-conceived manufacturing organisations that have expanded in size and in output to a remarkable degree in a short space of time. What remains to be proven is the ability of many of them to face harder times and keener competition. Those likely to survive when the going becomes rugged are not necessarily with the largest build-

ings or the greatest number of employees. They are more likely to be those who made long-range plans, whose structure is based on a broad foundation of skill and service to the consumer.

It is upon such farsighted industries that Australia's greatness as a productive nation rests, and on whom the Commonwealth will depend for continued prosperity.

It is a keen pleasure for us, while observing the flow of Aus-

tralian production, to single out an organisation with those admirable qualities, to learn what we can of their contribution to the fabric of our national life, and to tell their story in the "Manufacturer".

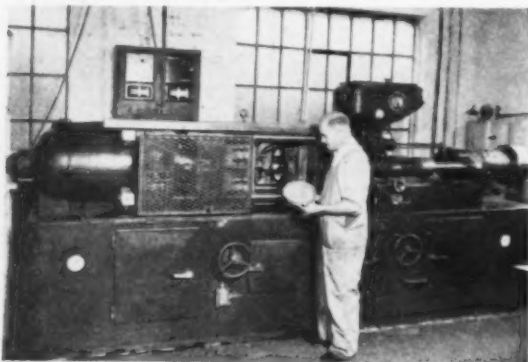
The photographs reproduced on these pages were taken at the premises of Commonwealth Moulding Pty. Ltd., at 242-246 Princes Highway, Arncliffe, N.S.W., where we witnessed the production of a considerable range of plastic products and learned of the important field of custom moulding.

Commonwealth Moulding Pty. Ltd., like many other modern companies, has a history of rapid expansion. It became apparent to us during the early stages of our visit, however, that these custom moulders have not outgrown their staying power and have a bright, alert eye on the future.

This progressive company has two channels of output. They manufacture an extensive range of items, mostly designed and developed by themselves, and they have considerable capacity for expert custom moulding of plastics. Their regular products include



This well-equipped toolroom, a prominent feature in the home of "Marquis" plastics, serves the company well in their production of custom mouldings for Australian industry.



This 9 oz. injection moulding machine is among the modern, efficient plant operated by Commonwealth Moulding Pty. Ltd. for the production of "Marquis" plastics.





The 81lb. cabinet for the Kriesler radiogram as it comes from the press. Commonwealth Moulding Pty. Ltd. describe this as "one of the largest compression mouldings of its kind in Australia."

radio and electrical components (among them an outstanding wire-wound potentiometer), industrial hardware, builders' hardware, refrigerator equipment such as collars and lids, table and kitchenware, toys and fancy goods.

All of these products are marketed under the trade name of "Marquis" a name well and favourably known to Australian industry, signifying as it does a range of reliable plastic mouldings.

It is a range of which any plastic moulder could be proud and satisfied. Commonwealth Mouldings Pty. Ltd. are proud of these manufactures, but they are not satisfied to coast along on the popularity they enjoy. They are secondary, they insist, to the custom moulding service which has been carefully built up along sound lines over the years and which is proving of extreme value to other fields of Australian manufacture.

This modern, 40,000 sq.ft. factory is entirely self-contained. Planning, die making, heat treatment, production and packing and despatch sections have been kept carefully balanced throughout the expansion which has taken place since the company's formation in 1933.

Mr. T. K. Stewart, recently appointed general manager of the company, explained this at the outset and made a point of the fact that with the continued growth of the organisation care would be taken to retain the production set-up which ensured maximum service in custom moulding.

This had been the backbone of the company's contribution to the



Buffing the trimmed and carefully checked cabinets before delivery to the radio manufacturer. At left can be seen a cabinet with lid in place.

fabric of Australian industry and would continue as its main feature.

During our subsequent tour of the factory under the guidance of sales manager, Mr. K. Bridie, we were able to witness just what is being done along these lines at the present time.

An example of the quality of this firm's custom moulding was found in a current production—cabinets and cabinet covers for the well-known Kriesler "3-in-one" radiogram. To get the true picture of this achievement it was necessary to visit the scene of earlier stages of production, the company's toolroom where precision dies for such manufactures are constructed.

This phase of the company's activities we found really surprising. It is not unusual to find efficient toolrooms in factories of this type. What was surprising was finding the die production department occupying such a large proportion of the total factory area, so well staffed, and working in such close co-operation with

the planning office. It bears out, of course, the company's claim that precision custom moulding is, and will remain, their major aim and constant pre-occupation.

We illustrate this spacious and well-equipped toolroom. What we cannot illustrate is the scrupulous care that goes into every stage of the production of a die by Commonwealth Mouldings Pty. Ltd. However, this is most evident in the finish and precise accuracy of the final product, qualities which are retained throughout the entire run.

While it so happens that the dies for this job were not produced in this toolroom, the planning of them was done by Commonwealth Moulding experts, and, of course, the actual making of the die would have been easily within the capacity of this firm.

The cabinet of the Kriesler radiogram, Mr. Bridie claimed, is the largest compression moulding of its kind in Australia, and in its dimensions gives an indication



The lid for the Kriesler radiogram weighs 3 lbs. and is produced with the same attention to quality as that afforded the cabinet moulding.

of the company's capabilities in this field.

This 81lb. phenolic moulding is produced in a 500 ton press at an actual operating pressure of 3,000 lb. p.s.i. Cored and steam heated with twin trap control, the die size is 31"x38"x33". Moulding measurements are 20"x20"x12", to produce a cabinet the actual size of which is 19"x19"x10½".

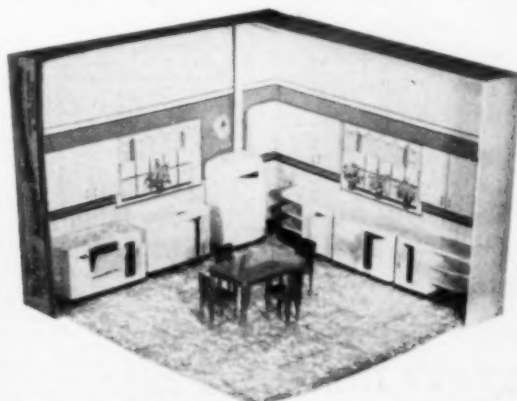
In this job, "Ellitane" specially formulated long-flow cabinet moulding material is used, coming to the press via two "Raytherm" preheaters, one 7.5KW and the other 3.5KW.

From the press the newly-moulded cabinets are worked through a series of four shrink fixtures before passing to another department for trimming.

The matching cover for the cabinet, a 3 lb. compression moulding, is produced on a smaller press, and although of less complicated design, receives the same comprehensive care in production as that afforded the cabinet itself.

Our illustrations show stages of these productions and also the appearance of the assembled unit after flash removal and buffing, when it is ready for delivery to the radio manufacturer.

Of the very considerable range of toys produced by Commonwealth



A prominent "Marquis" product. The "Little Homemaker" toy kitchen set with "walls" in place, flooring laid, and the units set out in one of the many arrangements possible.



General manager Mr. T. K. Stewart, is carrying out the company's policy of service to industry.



Component parts of two of the units for the "Little Homemaker" Set, before trimming and assembly. Shown are the sink and cooking stove moulding in white cellulose acetate, the hinged doors, and the blue base portions.



Used by some of the most modern  
and largest foundries in Australia, as  
well as hundreds of other concerns.

## "JAMEC" PNEUMATIC HAMMERS AND VIBRATORS

are doing a grand job

Stockists in all States

Ask for full particulars of the  
JAMEC range of tools



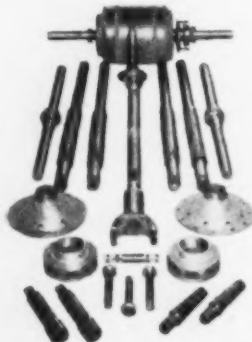
# JAMEC

Made and Guaranteed by

**J. MORRIS ENGINEERING CO.**

403 ELIZABETH STREET, MELBOURNE, AUSTRALIA

## RECONDITIONING OF WORN MACHINE PARTS



Armature Shafts, Stub  
Axles, Lathe Spindles,  
Hydraulic Rams, Tail  
Shafts, Rollers.

Metal Sprayed with  
Steel, Stainless Steel,  
Bronze Monel without  
distortion.

Ground back to true size.

Consult:

**METAL COATINGS PTY. LTD.**

16 BRIDGE ROAD, STANMORE, N.S.W.

Telephone: LA 2533

Moulding Pty. Ltd., undoubtedly  
the most interesting is the "Little  
Homemaker Set", which we il-  
lustrate.

It comprises a sink unit, a  
refrigerator, a stove, a cupboard,  
two servaries, a table and four  
chairs. The base and lid of the  
attractively designed box in which  
these pieces of miniature kitchen  
furniture are packed, are set up  
to form walls, as shown, and a  
square of stiff paper "linoleum" is  
unfolded to form the flooring.

Within this toy kitchen any  
number of arrangements of the  
pieces are possible. Doors are  
hinged and open and close freely,  
yet the pieces are strong enough  
to withstand rough handling. These  
features, and the fact that fine  
detail has been faithfully re-  
produced in these toys, are re-  
sponsible for the immense popu-  
larity of the "Little Homemaker  
Set" amongst children of all ages.

The set is injection moulded  
in cellulose acetate and provides  
a good example of the careful  
design and skilful construction of  
dies for the maintenance of a high  
degree of accuracy over a long run,  
which is a feature of "Marquis"  
products.

The "Little Homemaker Set"  
was designed by Mr. J. Bird, chief  
designer for Commonwealth Mould-  
ing Pty. Ltd., and has been in  
steady production since 1948.

It consists of 27 moulded com-  
ponents, produced in nine dies.  
The chairs and table are an  
attractive shade of blue, as are the  
components which form the backs,  
bases and inner shelves of the  
units. Outer components are white.  
All are of course, washable.

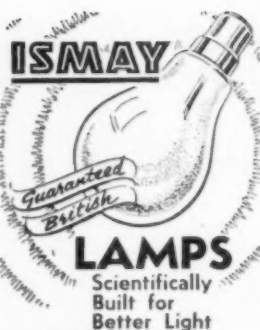
The components from the nine  
dies are grouped as follows: set  
of 10 doors; servery (right and  
left); bases for serveries; refrig-  
erator and cupboard; bases for  
refrigerator and cupboard; stove  
and sink; bases for stove and sink;  
four chairs; table. Considerable  
ingenuity was necessary in the  
design of these dies, for the  
accurate reproduction of detail  
of the full-size originals presented  
numerous problems.

One of our illustrations shows  
the sink and stove units as they  
came together from the press,  
before trimming of runners; base  
components for these units; and  
the doors which are fitted to them  
during assembly.

With the approach of the festive  
season the demand for these sets  
is increasing rapidly.

The demand for the custom  
moulding facilities offered by  
Commonwealth Moulding Pty.  
Ltd., is also booming. Not from  
reasons of seasonal requirements,  
though, but as a result of years of  
building up an enviable reputation  
for fine workmanship, of meeting,  
without fail, the endless demands  
of Australian industry.

The aim of Commonwealth  
Moulding Pty. Ltd., we are in-  
formed, will continue to be a  
steady expansion; a slow, sound  
growth that will be enduring and  
will make possible the continued  
service to industry in the im-  
portant field of custom moulding  
which has inspired the activities  
of this organisation in the past.



**ISMAY**  
**LAMPS**  
Scientifically  
Built for  
Better Light  
Australian Distributors:-  
**STEWART J. MATHEWS PTY. LTD.**  
217 William St., Melbourne, C1  
Telephones: MU 6483

## MANUFACTURING Capacity Available

STEEL, BRASS  
and PLASTICS

Capsten Lathe Work  
up to 1 1/2 in.

## OLYMPIC METAL INDUSTRIES

Instrument Makers and  
General Engineers  
LITTLE WALKER STREET,  
NORTH SYDNEY. Tel: XB 1978.

CHEMICALS—DRY COLOURS,  
RAW MATERIALS FOR  
INDUSTRY

## H. BLEAKLEY & COY.

(1910) PTY. LTD.

397-399 KENT ST., SYDNEY.  
Phones: BX 5761, BX 5762

Melbourne Office: H. Bleakley & Com-  
pany (1910) Pty. Limited, C/o Agg &  
Sons, 18 Queen Street, Melbourne.  
Phone: MU 3120.

DRUGS • FINE CHEMICALS  
POWDERED METALS

## CANS

Printed or Plain.

FANCY METAL BOXES  
KEGS AND DRUMS

## RICHARD HUGHES PTY. LTD.

A MODERN FACTORY AT  
YOUR SERVICE

Phone UJ 2121 (6 lines)

59-75 Queens Rd., Fivedock  
N.S.W.

## OVER 7,500 TONS PER DAY . . .

of vegetable and animal oils are being refined throughout the world by the  
**SHARPLES CONTINUOUS VEGETABLE OIL REFINING PROCESS**

### BECAUSE

- Refining losses are reduced by 20-50% compared with batch kettle refining. The Sharples Continuous Alkali Refining Process often pays for itself in less than 12 months out of savings.
- The process is continuous and flexible in operation—the refiner has instant and exact control over all phases of operation.
- One operator can control any Sharples plant, whatever its capacity.
- Building, floor space, steam and power requirements are low.
- The quality of Sharples refined oils is in every respect equal to or better than the best kettle refined oils.
- Much existing kettle refinery equipment can be utilised in the Sharples plant.
- Sharples supply complete engineering service and supervision.

*Reduce your refining losses and operating costs; standardise your products—obtain increased yields and profits. Our engineers will be glad to discuss with you the Sharples Caustic or Soda Ash Continuous Centrifugal Vegetable Oil Refining Processes.*

*The Sharples Division*

**Gilbert Lodge & Company Limited**  
REPRESENTING THE SHARPLES CORPORATION  
FACTORIES IN AMERICA AND ENGLAND

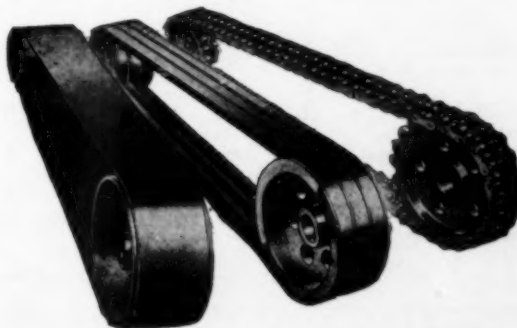
*Centrifugal and*  *Process Engineers*

ADELAIDE • BRISBANE • MELBOURNE • PERTH • SYDNEY

## Mechanical Power TRANSMISSION EQUIPMENT



Flat and V-Rope Drives.  
Morse Chain Drives.  
Clutches.  
G.W. Couplings.  
Pulleys.  
"Angus" Oil Seals.  
Speed Reduction Units.



**GARDNER WAERN & CO. PTY. LTD.**

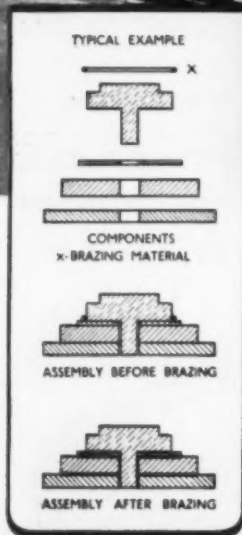
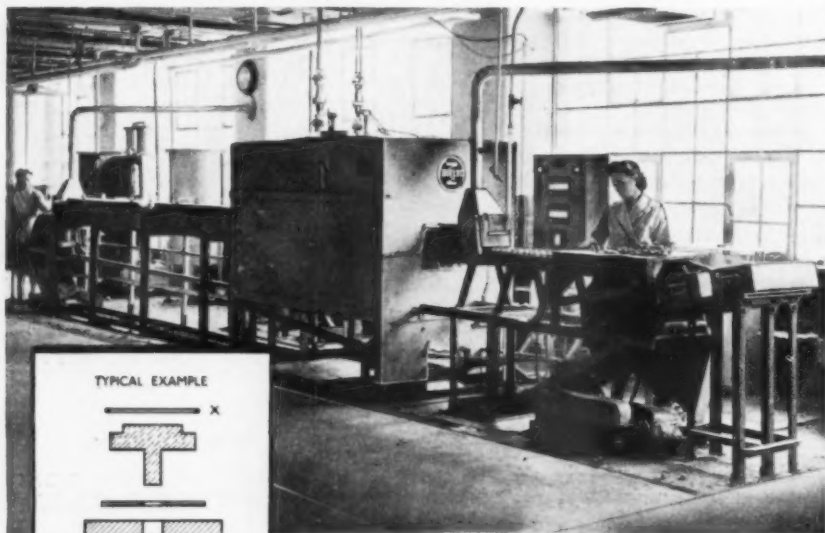
481 FLINDERS ST., MELBOURNE.  
'Phone: MU 9451\*

45 WATT ST., NEWCASTLE.  
'Phone: B 1587.

208 CLARENCE ST., SYDNEY.  
'Phone: MA 9134\*

AGENTS IN ALL STATES

## BIRLEC ELECTRIC BRAZING FURNACES FOR LOW-COST FABRICATION OF SMALL PARTS



### Electric Brazing Offers UNLIMITED POSSIBILITIES FOR CHEAPENING & SIMPLIFYING PRODUCTION

- No labour required except for initial assembly of components.
- A complete unit, with any number of joints, can be made in one operation.
- Several articles can be brazed at one time.
- The joints are as strong as the parent metal.
- No flux is required.
- The brazed assembly is clean.
- Stresses relieved in brazing process.
- All brazed joints are pressure tight.
- Brazing medium applied only where needed—none is wasted.

Above—Birlec continuous belt-conveyor type brazing furnace.

**BIRLEC LTD.**  
(Incorporated in England)

51 PARRAMATTA ROAD, GLEBE, N.S.W.  
MELBOURNE OFFICE — 415 LONSDALE ST.



Agents: ADELAIDE—Unbehaun & Jolstone Ltd.; BRISBANE—Alfred Snashall, Anthon Pty. Ltd.; PERTH—Eagle & Globe Steel Co. Ltd.  
WELLINGTON, N.Z.—H. P. Wrigley, G.P.O. Box 1126.

**THERE'S A BIRLEC FURNACE FOR *every* HEAT TREATMENT AND MELTING PROCESS**

## After Business Hours

(Continued from page 2.)

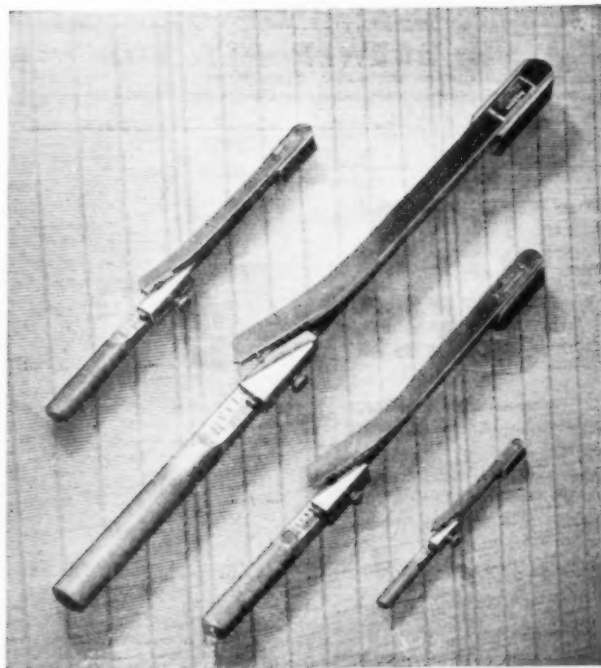
about. I did dream about. I began to look forward to the loyal toast. I have no recollection of the brand. It was probably a very good one. The Italians knew their grog, and so did the R.F.C. But it was all the same to me. I was like the office boy who has fallen in love with the principal girl in the pantomime. Afterwards, I came to associate creme de menthe with principal girls—and boys—and worse—but it will always remain in my memory as my first introduction to civilised drinking.

Of drinking in Italy in 1918, I can remember very little more. In the mess, the popular drink in the daytime was egg-nog. In the village pub it was Cinzano—I can't remember whether sweet or dry—sweet, I imagine. Few village pubs carried Scotch. They called it fire water, and looked on in admiration (or perhaps it was disgust) while the incredible British drank the stuff. Beer—or hieer—was too weak to interest the British troops. One liqueur I remember—a sweet yellow thing called *vov*—I think. I've asked many people since if they've met it, but nobody seems to have. Perhaps it was a local brew—or perhaps I've got the name wrong. I can't remember now whether it was "orange" or what its flavour was.

The war over, I returned home—via Paris once more. This time, greatly palpitating, I went to the Folies Bergere. There I found an all-English company—fully clothed. (Every time I meet my old friend Jim Corneli, I think of the times I've wasted in Paris). Home in Scotland again with my people, my drinking came to a partial end. I occasionally forgot myself at the golf club, but it was not until I was 28 and on the way to Australia that my Bach-analian career was resumed.

Meanwhile I had got in tow with a young English lady whose people—the army sort—knew how to drink properly. For 12 months before she joined me in Adelaide and took charge of all my affairs, including my drinking, I had the great pleasure of living in residence at St. Mark's College. The S.S. Cathay, coming out, had been joined at Colombo by the Rev. Julian Kenneth Faithful Bickerseth, B.D., and a gang of school boy cricketers, including a surprising number of young gentlemen whose names (I afterwards learned) were famous in the Australian world of grog. Seppelt, Goldfinch, Lee, etc. The Rev. Julian Kenneth Faithful very kindly steered me into St. Mark's College as music tutor, there being no musicians there to tute, at the time.

At that time, Cooper's was the proper ale to drink. I acquired a genuine regard for it and could find little pleasure in West End. Some 13 years later, when another great war forced me to spend 3½ extremely comfortable but extremely dull years at Mallala, I



*Precision Tools*

## TORSION MEASURING EQUIPMENT

TENSION WRENCHES made by Warren & Brown Pty. Ltd. are recognised by Australian Engineers as the most robust, dependable, and simple to operate in the world.

SUITABLE for use on all types of Engines, Oil and Steam lines, Aircraft, Instruments and for a multitude of general engineering applications.

**WARREN & BROWN Pty. Ltd.**

113 BALLARAT ROAD, FOOTSCRAY, W.11

VICTORIA, AUSTRALIA

TELEPHONE: MW 1201

found the greatest difficulty in changing over to West End. I never knew why it was, but our mess never seemed to be able to get Cooper's, and I was reluctantly forced into becoming a regular customer of the West End Brewing Company. Now I find (damn it all) that I'm unhappy without my West End, while Cooper's arouses a nostalgic memory of my last year of bachelorhood and tends to put me prematurely to sleep.

I don't know why Cooper's make their beer so difficult to come by. From my own experience, I can't help wondering if they aren't making a big miscalculation in the psychological field.

As for the higher drinking—the kind that interests the Bacchus Club—I must confess that I am as much of an innocent abroad as ever. I realise now, of course, that there are other things than *creme de menthe*. I think I can tell the gentler, subtler European wines from their Australian namesakes, but I wouldn't like to bet even on that. It seems to me that, in wine as in music, the younger you start the better. After a certain age we tend to see "sermons in stones, books in everything." I'm not sure that our keenest delights are not to be found in youthful prejudices that refuse to die—irrational—crazy—

immortal—not reasoned, educated, worked out—some magic twist of harmony in Schubert, some face, some scene remembered, something that seems silly when spoken about.

### NEW FACTORY REGISTRATIONS

#### NEW SOUTH WALES.

Hamilton Furniture Factory, 25 Hudson Street, Hamilton—Furniture.

Portridge Bros., 81 John Street, Singleton—Coachbuilding.

J. W. & E. R. Rumbell, Salisbury, via Dungog—Timber and Joinery.

W. H. Allen, Paisley Street, Orange—Joinery.

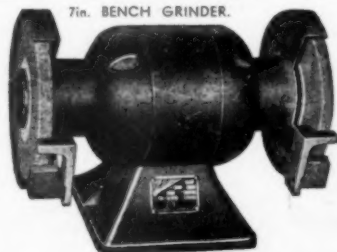
Coles Joinery Works, 70 Belmore Street, West Tamworth—Joinery.

C. V. Creegan, Hanging Rock Creek, via Nimbin—Timber and Joinery.

O. J. & W. H. Farrell, Beudeman—Timber and Joinery.

T. C. McIntyre Pty. Ltd., Mt. Nullum, Uki—Timber and Joinery.

Smalls Quality Productions, 11 Garrard Street, Lismore—Furniture.

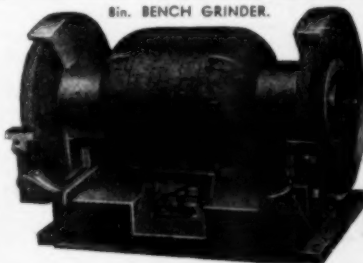


7in. BENCH GRINDER.

*Hebco*

Enclosed Dust-Proof Bell Bearing Motor . . . 2,800 R.P.M. • Obtainable for Single Phase 200 or 230/240 volt, or Three Phase 400 volt, 50 Cycle A.C. Current. • Polishing Mop Attachment obtainable at Small Additional Cost. • Distance between Wheel Centres, 14in.

"Hebco" machines available from Melbourne merchants, and from E. J. Hall, BRISBANE; H. F. Gregory & Co. Pty., Ltd., SYDNEY; Harris, Scarle Ltd. and Gerard & Goodman Ltd., ADELAIDE; and William Adams, PERTH.



8in. BENCH GRINDER.

**H. E. BREHAUT PTY. LTD.**

791 WHITEHORSE ROAD, MONT ALBERT, VICTORIA.  
Telephone: WX 1075



# "ZERISTO" Cork Board, Cork Sectional Pipe Covering, Granulated Cork.

**W. H. BREWER PTY. LTD.**

Blackwood Street, North Melbourne. F 3053, F 0453.



## 'MARBRITE' BRIGHT STEELS

"MARBRITE" BRIGHT STEEL is manufactured in completely modern plant, to standard specifications, from specially prepared raw materials.

Metallurgically controlled on a commercial basis, through all processes, "MARBRITE" BRIGHT STEEL can be supplied in a wide range of grades and in sizes and sections to suit most needs of manufacture.

The following classes and grades are standard:

### BRIGHT MILD STEEL —

- GRADE 1 — Shafting.
- GRADES 1B, 1A — High Tensile Shafting.
- GRADE 2 — Semi-Freecutting Steel.
- EXTRA SUPER — Freecutting.
- LEADER — Freecutting for specialised purposes.
- GRADE CH2 — Case hardening.

### PRECISION GROUND —

Supplied in all "Marbrite" Grades, to Standard or Special Tolerances.

### BRIGHT ALLOY STEELS —

- "MARBRITE" L5 — 3 per cent. Nickel — Case Hardening.
- "MARBRITE" Q5 — Nickel Chrome — Case Hardening.
- "MARBRITE" L10 — Nickel Molybdenum — Case Hardening.
- "MARBRITE" Q7 — Nickel Chrome — High Tensile.
- "MARBRITE" R4 — Nickel Chrome Molybdenum — High Tensile.

### AIRCRAFT STEELS —

#### To Standard Specifications

"MARBRITE" Rounds, in Grade CH2 and other suitable grades, can be supplied oversize to provide for grinding, after heat treatment.

Special Sections — A comprehensive range is available against order.

Precision ground bars are manufactured to Standard tolerances with a wide range of Round sizes from 1in. to 6in. diameter. Table A tolerances are within +.000—-.002 down to within +.00025—-.00025.

PLAN YOUR PRODUCTION WITH "MARBRITE" BRIGHT STEELS

Write for the "MARBRITE" PRICE FOLDER, containing full price lists, specification sheets, tolerance tables, etc.



**GEO. H. MARTIN PTY. LTD.**

**"MARBRITE" BRIGHT STEELS**

"Marbrite House"

Telephone: MJ 4341

SYDNEY, N.S.W.

32-38 Bathurst Street

Telephone: MJ 4341

Northern Rivers Canvas & Blind Co., cnr. Carrington Street and Magellan Road, Lismore—Canvas Goods.

### VICTORIA.

Sheldrake, W. & W., Waterloo Road, Trafalgar—Fibrous Plaster. Manser & Mullins, 231 Maribyrnong Road, Ascot Vale—Cement Articles.

Edson, A., 52 Flinders Lane, Melbourne—Clothing. Miodownik, D., 199 Spring Street, Melbourne—Clothing. Cresswell, Burbridge & Lynch, Kemp Avenue, Springvale—Supplies.

P.C.D. Pty. Ltd., rear 139 Union Road, Surrey Hills—Confectionery. Smyth, D. & V., St. Andrews Avenue, Bendigo—Plumbing and Sheet Metal.

### Industrial Companies and Firms

#### NEW SOUTH WALES.

AUSTRALIAN ASBESTOS INSULATIONS AND CONTRACTING CO. PTY. LTD.—Capital: £10,000. Manufacturers of asbestos, fibrous minerals, builders' requisites. Subscribers: Hermon Bentley and Herbert W. Bentley. Registered Office: Marrickville. (Lodged by William Arnott & Poole, 27 Hunter Street, Sydney.)

BLACKWOOD, E. C. (N.S.W.) PTY. LTD.—Capital: £25,000. Stationery manufacturers. Subscribers: Ange S. Ramaciotti and James L. Tudehope. Registered Office: Sydney. (Lodged by F. W. Turton, 34 Hunter Street, Sydney.)

CREATIVE WEBBINGS PTY. LTD.—Capital: £5,000. Textiles manufacturer. Subscribers: Maurice Faltz and Monick Levy. Registered Office: Sydney. (Lodged by Clayton, Utz & Co., Liverpool Street, Sydney.)

ELECTRO CERAMICS PTY. LTD.—Capital: £30,000. Ceramics, products and machinery manufacturers. Subscribers: James Hendry, William F. Paul, Donald L. Robertson, Harold G. Ferrier, Norman A. Pardoe, Jack Shaw and Lindlay H. Murray. Registered Office: Sydney. (Lodged by F. A. Taylor, 2-10 Chester Street, Camperdown.)

GENERAL TRANSFORMERS PTY. LTD.—Capital: £30,000. Manufacturers of Transformers and machinery. Subscribers: James Hendry, William F. Paul, Donald L. Robertson, Harold G. Ferrier, Norman A. Pardoe, Jack Shaw and Frank A. Taylor.



**LADDERS, STEPS  
and TRESTLES**  
of Every Description.  
Quality Right—Price  
Right.

**Mote Ladders  
PTY. LTD.**

Works:  
38-44 VICTORIA RD.,  
DRUMMOYNE.  
Phone: WA 2521

CATALOGUE ON  
APPLICATION.

Registered Office: Sydney.  
(Lodged by F. A. Taylor, 2-10  
Chester Street, Camperdown.)

**GLORY BOX (PENRITH)  
PTY. LTD.**—Capital: £5,000. Clothing  
manufacturers. Subscribers:  
Lucie M. Rath and Maximilian  
Rath. Registered Office: Penrith.  
(Lodged by K. Reiss, 383 George  
Street, Sydney.)

**GROGAN'S FROZEN FOODS  
PTY. LTD.**—Capital: £15,000. Con-  
fectionery and frozen foods manu-  
facturers. Subscribers: William H.  
Grogan, John S. Moon, Albert R.  
McCrone, John L. Grogan, Ronald  
Mouat and Nancy J. Cussons.  
Registered Office: 75 Dartbrook  
Road, Auburn.)

**IRVING, F. H. (MEDICAL  
PRODUCTS) PTY. LTD.**—Capital:  
£10,000. Manufacturers of Medical  
preparations and drugs. Sub-  
scribers: Francis H. Irving, Neil  
L. Irving and Betty E. Priest-  
ley. Registered Office: Sydney.  
(Lodged by W. B. Small & Co.,  
12 Spring Street, Sydney.)

**PLANET CABINETS PTY.  
LTD.**—Capital: £5,000. Cabinet-  
making and Furniture Manufac-  
turers. Subscribers: Ernest J.  
Goldstein and Basil F. Goldstein.  
Registered Office: 29 Hunter  
Street, Hornsby.

**SUN-ART PTY. LTD.**—Capital:  
£25,000. Manufacturers of Metal,  
Wood and Plastic Goods. Sub-  
scribers: Walter H. Fischer and  
Max Mundell. Registered Office:  
Sydney. (Lodged by Maurice  
Inance and Glass, 147 Castlereagh  
Street, Sydney.)

#### VICTORIA.

**CELLCRETE LTD.**, concrete  
manufacturers, Melbourne. Cap-  
ital: £10,000. Subscribers: J. B.  
Harper, H. O. Clark, H. F. Sel-  
leck, N. M. Stephen, D. W.  
Rogers.

**DE STOOP (AUST.) LTD.**, with  
nominal capital of £150,000, cotton  
weavers, spinners, etc., was reg-  
istered recently. Directors: R. H.  
Best, R. R. C. J. and V. E. C. E.  
De Stoop.

**CLARKE MOBILE CRANES  
LTD.** Nominal capital: £100,000.  
Manufacturers, distributors, hirers,  
mobile cranes.

# "Wilcolator"

Provides

## AUTOMATIC PROTECTION FOR HOT WATER SERVICES!

THE MODERN WAY TO  
SIMPLIFY HOT WATER  
SERVICE INSTALLATION

The Wilcolator 780-C/in.  
water pressure reducing valve  
banishes old-fashioned over-  
head cold water feed tank.



Wilcolator 780-C/in. Water Pressure  
Reducing Valve.

- Specially designed to control  
varying main pressure to the  
steady reduced pressure re-  
quired for domestic hot water  
services.

- Easily installed in existing homes  
—saves costly ceiling installa-  
tion of cold water feed tank,  
with attendant structural altera-  
tions.

- Approved by water supply  
authorities in Brisbane, Sydney,  
Melbourne and Hobart.

#### OTHER PRODUCTS MANUFACTURED BY WILCOLATOR:

Wilcolator Hot Water Service Thermostats  
Wilcolator Electric Refrigerator Thermostats  
Wilcolator Electric Range Thermostats  
Wilcolator Industrial Instruments (for measurement and  
control)  
"ACE" Steam Control Equipment

### WILCOLATOR MANUFACTURING PTY. LTD.

511-515 KEILOR ROAD, EAST KEILOR, MELB., VIC.

Telephones: FU 4449, FX 8491-2-3.

#### Wilcolator Sales and Service —

BRISBANE: C. F. Willers, Ryan House, 34 Eagle Street; Instrument Engineering Co., 32 Annerley Road, South Brisbane. SYDNEY:  
A. E. Ackland Pty. Ltd., 187 Clarence Street; Instrument Service Co., 3 Burton Street, Globe. MELBOURNE: A. E. Ackland Pty.  
Ltd., 406 Post Office Place; Wilcolator Manufacturing Pty. Ltd., ADELAIDE: C. R. Muller, Worenda Buildings, Grenfell Street;  
Unbehaun & Johnstone Ltd., 58 Gawler Place. PERTH: Atkins West Aust. Ltd., 894 Hay Street.

**Industrial Minerals  
and  
Siliceous Abrasives**  
Laboratory Standardised,  
Ground and Processed to  
Specification by  
**Austral Rock Milling  
Pty. Ltd.**  
GLADSTONE STREET  
NEWTOWN, N.S.W.  
Phone: LA 2542

**GENERAL  
ENGINEERS  
AND  
SHEET METAL  
WORKERS**  
**B.S.F. PTY. LTD.**  
9-11 David Street  
RICHMOND, E.I., Victoria  
Tel.: JA 2084

The Machinery  
People  
**Richardson's**  
281 Latrobe St., Melbourne. MU 2321.  
● Engineers' Machine Tools  
● Woodworking Machines  
● Portable Electric Tools  
● Circular and Hand Saws  
**ALL TYPES SAW REPAIRS**

# INQUIRIES FOR PLANT MATERIAL AND AGENCIES

THE AUSTRALASIAN MANUFACTURER'S INQUIRY DEPARTMENT

This Inquiry Service is for the use of readers of "The Australasian Manufacturer" who wish to trace suppliers of Plant, Equipment and Materials, and for particulars of agencies offered. Address your inquiry to the Inquiry Department, and give the fullest possible particulars to enable us to put you in touch with the best sources of supply. **INCLUDE A STAMPED SELF-ADDRESSED ENVELOPE WITH YOUR INQUIRY.** It is essential that telephone inquiries be confirmed by letter. No charge is made for Inquiry Services, but normal advertising rates will be charged if agencies are sought by manufacturers' representatives or if goods are offered for sale. For the benefit of new subscribers, inquiries will be published in two or more consecutive issues.

## SPECIAL NEW INQUIRIES.

**WHEN REPLYING** to an Inquiry, please quote the Reference Number and send your reply to the Inquiry Department, "The Australasian Manufacturer," 16 Bond Street, Sydney. **INCLUDE A PLAIN, STAMPED ENVELOPE** so that we can forward your reply to the inquirer.

**CO. APPARATUS FOR SALE:** Siemens-Elliott Electrical CO. Apparatus, complete with Filter, Aspirator, Cooler, Transmitter, Rectifier and Elliott CO. Indicator with a 5 in. scale graduated 0-20% CO<sub>2</sub>. The apparatus is in almost new condition and ready for use on boilers or furnaces. Write Ref. No. 8304, c/o "The Australasian Manufacturer."

**VICTORIAN REPRESENTATIVE WANTED:** N.S.W. manufacturer of well-known brand of Small Tools, wishes to appoint Victorian Representative. Write to Ref. 8303, c/o "The Australasian Manufacturer."

**BRASS DISCS:** Manufacturer has for sale a quantity of 24 Gauge, half hard, 21 in. diameter Brass Discs. If interested in this material, write to Ref. 8296, c/o "The Australasian Manufacturer."

**CASE HARDENING FURNACE:**—Immediate delivery. Oven outside measurement, 30 in. x 25 in. x 31 in. deep, sliding frame door with balance-weight control, 11-control taps, fire-brick lined. Previously used. Write to Ref. 6577, c/o "The Australasian Manufacturer."

**CHILLED IRON ROLLS FOR SALE:**—Sydney firm has for sale a quantity of high quality Chilled Iron Rolls of American manufacture, 15 in. diameter, 151 in. face. All ground finish. Illustrations and specifications supplied on application to Ref. 8210, c/o "The Australasian Manufacturer."

**CUP HEAD BOLTS AND NUTS —EXCHANGE WANTED:** Engineering firm has approximately 1,000 each of 7 in. x 1 in. and 8 in. x 1 in. Cup Head Bolts and Nuts, which they wish to exchange for 5 in. x 1 in., 5 1/2 in. x 1 in. or 6 in. x 1 in. cup head bolts and nuts. Write to Ref. 8299, c/o "The Australasian Manufacturer."

**BRIGHT MILD STEEL WANTED:** Sydney firm wants to buy 3 in. Bright Shaft Steel, to be used in lengths of 9 feet. Write to Ref. 8300, c/o "The Australasian Manufacturer."

**"PERFECTO" FURNITURE POLISH:** Inquirer is endeavouring to locate the Work Saver Products Co., makers of "Perfecto" furniture polish. Write to Ref. 8301, c/o "The Australasian Manufacturer."

**RED PIGMENTS:** Australian manufacturers of Ferric Oxide red pigments, as used in tile making, brick making, red pottery, paints, etc., are requested to write to Ref. 8302, c/o "The Australasian Manufacturer."

**SUPPOSITORY MOULDS:** Manufacturers of Suppository Moulds, Children's and Adults' size, are requested to write to Ref. 8292, c/o "The Australasian Manufacturer."

## Capacity Available

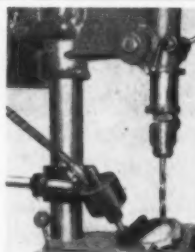
Metal Stamping up to 15 tons.  
Pressure Die-casting and Toolmaking.

## T.C. Kitto & Co. Pty. Ltd.

338 Gore Street, FITZROY, VIC.  
Phone: JA 6823

## PLASTIC MOULDINGS, DIES AND AUTO. LATHE CAPACITY

Specialists in Electrical and Industrial Mouldings. Prompt Service.  
**MASTERCRAFT PLASTICS**  
72 Parramatta Road, STAMMORE,  
N.S.W. LA 2680, FW 3619.



## "DRILLAIR" CLAMP

The Modern Complement of every  
**DRILLING MACHINE**  
in the Tool Room—for Repetition Work  
for R. & M.

Holds the job firmly  
Quickly set to any height and angle  
Simplifies jig design  
Prevents accidents

## ACTA PTY. LTD.

15 O'Connell Street, Sydney, N.S.W.  
Phone: BW 7431

**CHILDREN'S HOSPITAL BED-STEADS:** If you are a manufacturer of Children's Hospital Bedsteads, write to Ref. 8293, c/o "The Australasian Manufacturer."

**AGENCY AVAILABLE:** Agency House with engineering knowledge or connections or constructional engineers wanted to represent in all States, well-known Swiss manufacturer of hand-operated hoists, electric hoists and suspended railways. Write Ref. 8288, c/o "The Australasian Manufacturer."

**ENGINE STUDS AND WING NUTS:** Melbourne firm is in urgent need of thirty gross each of 2 1/2 in. x 7/16 in. whit. Engine Studs and 7/16 in. Heavy Wing Nuts. If you can supply write to Ref. 8289, c/o "The Australasian Manufacturer."

**CUPBOARD VENTILATORS:** Inquirer is seeking the manufacturer of "Inserta" brand Cupboard Ventilators. Write to Ref. 8294, c/o "The Australasian Manufacturer."

**PRESS  
CAPACITY  
AVAILABLE**  
**HERCULES STEEL PRODUCTS**  
(AUST.) LTD.  
PORT KEMBLA, N.S.W.

## SHOTBLAST PLANT FOR SALE

Shotblast plant for sale, cabinet approx. 6ft. cube. Can be seen in operation at the **HARTLEY CYCLE WORKS**, cnr. Hann and Whiteman Streets, South Melbourne.

## Vitreous Porcelain Enamelling

Completely Modern Continuous Furnace with Capacity  
Available for Sheet Metal Enamelling

Continuous Basis Preferred

## W. T. CARMICHAEL LIMITED

Rawson Street, Auburn, N.S.W. UX 7407.

# The DAVY FLAMEPROOF BORING MACHINE



Model "C"  
For COAL and STONE

An all-Australian Machine giving excellent performances.

Output  $1\frac{1}{2}$  H.P.  
Voltages, 415, 125, and 32 volt A.C. 50 cycle.  
250 volt and 30 volt D.C.

Investigate the merits of the 30 volt D.C. battery operated Davy Boring Machine for use where there is no reticulation.

FULL PARTICULARS ON APPLICATION.

## ELECTRIC CONTROL & ENGINEERING LTD.

CHESTER STREET, CAMPERDOWN, SYDNEY

'Phone: LA 3211

MELBOURNE — 303 Burwood Road, Hawthorn.

ADELAIDE — Wm. Adams & Co. Ltd., 157 Waymouth Street.  
PERTH — J. G. Pritchard Ltd., 360 Murray Street. And at Brisbane.

**MACHINE WANTED FOR WINDING SPIRALS OF ELECTRICAL ELEMENTS:** N.Z. firm desires to contact any firm who can supply them with a machine for winding spirals as used for electrical elements. They use 26 to 31 gauge B. & S. nichrome and they are at present winding them on a 5/64 mandril. They want to mount a 5lb. spool of wire for a continuous spiral. Write to Ref. 8282, c/o "The Australasian Manufacturer."

**UNIVERSAL SPIRAL MILLING ATTACHMENT:** Melbourne firm requires a Spiral Milling Attachment for No. 2 MH Cincinnati Milling Machine, must be in first class condition. If you can supply write to Ref. 8290, c/o "The Australasian Manufacturer."

### EXECUTIVE SEEKS POSITION

Production Executive, practical background, Mech. Eng. graduate, experienced in production planning, estimating, design, materials handling and staff control, seeks responsible managerial position with Sydney organisation.  
Reply to "MANAGERIAL," C/o "The Australasian Manufacturer," Box 1687, G.P.O., Sydney.

### SPRAY PAINTING

— QUANTITIES ONLY —  
SMALL ARTICLES PREFERRED  
WOOD OR METAL

R. MANDL

690 NEW SOUTH HEAD ROAD  
ROSE BAY, N.S.W.  
FB 8832. After Hours: FB 3901.

**MILD STEEL FLATS:** Sydney firm wishes to purchase any of the following sizes, any quantity:  $\frac{1}{2}$  in. x  $\frac{1}{2}$  in.,  $\frac{1}{2}$  in. x  $\frac{1}{2}$  in.,  $\frac{1}{2}$  in. x  $\frac{3}{16}$  in.,  $\frac{1}{2}$  in. x  $\frac{3}{16}$  in.,  $\frac{1}{2}$  in. x  $\frac{1}{4}$  in.,  $\frac{1}{2}$  in. x  $\frac{3}{16}$  in. Write to Ref. 8287, c/o "The Australasian Manufacturer."

**ALUMINIUM MONOSTEARATE:** Firms manufacturing Aluminium Monostearate are asked to write to Ref. 8286, c/o "The Australasian Manufacturer."

### ELECTRICAL INDUSTRY PROTEST.

The Federal Council of the Electrical, Radio and Telephone Manufacturers of Australia recently sent the following letter to all members of the Australian Parliament:—

"Dear Sir,—The Electrical Industry views with concern and alarm the Federal Government intention to continue participation in the General Agreement on Trade and Tariffs implied by its decision to send a delegation of public servants to the Torquay Conference. This decision has been taken despite and notwithstanding very strong protests from all industries throughout the Commonwealth, including the electrical industry; it is, therefore, hoped that those responsible are fully aware of the long range effect which such a decision could have on vital secondary industries.

"It is strange that those now in Government should, when in Opposition, have condemned this agreement in no uncertain terms, and this volte face is most bewildering, as is also the fact that experienced industrialists are not to be included in the delegation.

"Conditions at the present time concern us little, but the position some years hence when conditions will be entirely different is our main problem. Unfair competition from countries on lower living standards may well force out of business many industries vital to the Commonwealth both in times of war and peace, and would result in probably mass unemployment and lowering of living standards.

"Extinction of some industries vital to the Commonwealth in time of war may be exactly what is desired by a certain section of the community more loyal to a foreign power than Australia.

"Government advisors state that escape and loophole clauses are included in the agreement which could be implemented should any industry find itself in difficulty by unfair competition. By the time the cumbersome machinery of State carried out the necessary investigations and took action, it may well be too late, as industries could not complain until hurt, and in the meantime, the country could be flooded with competitive overseas goods. Some industries cannot at present meet the demand for their products, but they have not objected to duty free

### "A New Service"

## HIGH QUALITY CASTINGS

in  
ALUMINIUM ALLOY

To Any  
Specification

## CASTALLOY PTY. LTD.

493 Albion Street  
West Brunswick, Vic.

Specialists in

Gravity Die-casting of all  
Aluminium Alloys

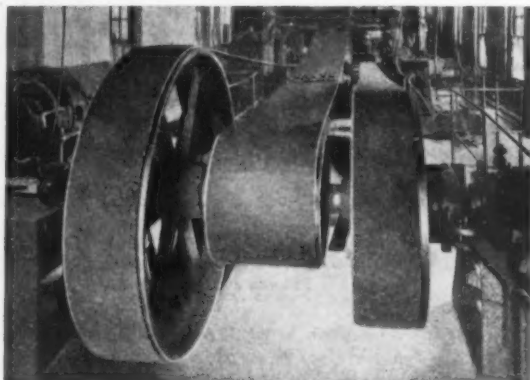
Any Quantity or Size

Prompt Service and Delivery

Telephone: FW 6277

## "CAMEL HAIR" BELTING

Sole Makers:  
F. REDDAWAY & CO. LTD.  
MANCHESTER, ENGLAND



"Reddaway" or "Camel Hair" Belts, 20-inch, 12-inch and 10-inch wide, driving an Electric Lighting Installation.

### THE BELT for all flat drives



Eminently suitable for Factories,  
Quarries, Pump and Engine Drives and  
where chemical fumes and varying  
temperatures prevail.



OUR TECHNICAL STAFF WILL GLADLY ASSIST WITH ALL DRIVE PROBLEMS

Sole Agents for Victoria and Tasmania:

**CAMERON & SUTHERLAND LTD.,** Riverside Avenue, South Melbourne. MX 2251

entry of competitive goods to alleviate the position.

"Already we have experience of things to come in the electrical industry if tariffs generally are lowered. A certain State Department has already placed orders for equipment manufactured by a Company in former enemy territory, at prices including present rates of tariff, less than those for similar equipment manufactured in Australia. This overseas factory is reported to be the most modern of its kind in Europe. It was destroyed by Allied bombing during the war but has now been completely rebuilt with the aid of Marshall dollars. Its employees work 60 hours per week at approximately 65 per cent. of the wages of Australians.

"If the existing protective tariffs are lowered, how can Australian industry compete with such countries except by lowering of our standards of living and in-

creasing hours of work. Czechoslovakia has already made demands on Australia for tariff reductions on certain commodities. If we agree to such requests from the outlet of the 'Iron Curtain', then we assist, rather than resist the menace of Communism, and the Bill to limit the activities of Communists in Australia becomes a farce. Parliament has the final power to ratify or otherwise any concessions which the public service delegation makes at Torquay, therefore the continued development and defence of Australia depends entirely on Parliament's further action. Thus you will see that as an elected representative of the people, a heavy responsibility is yours to ensure that when the proposals made at Torquay are brought forward for ratification in the House, the full implications of each and every proposal is thoroughly studied in the light of the need to develop Australia's

industries and capacity for employment.

Yours faithfully,  
J. WILSON, President."

### AUSTRALIAN ALUMINIUM BY 1952.

The Minister for Supply, Mr. Beale, gave the satisfactory assurance in the House of Representatives at Canberra recently that by 1952 aluminium will be produced in Tasmania. "The Government," he added, "hopes to produce approximately 13,000 tons of aluminium ingots a year. This tonnage is about equal to Australia's present needs."

The materialisation of these Government hopes will mean big things for this country, for aluminium is absolutely indispensable to both peacetime and wartime production.

### INCREASE IN GENERATION OF ELECTRIC POWER.

Figures issued by the Commonwealth Statistician, Dr. Roland Wilson, show that the generation of electric power in Australia has doubled in 10 years. In 1938-39 Australian power stations generated 4,688 million kilowatt hours. In 1948-49 the figure was 9,035 million kilowatt hours.

Increases in the various States over the 10 years, in millions of kilowatt hours, were:—

	1938-9.	1948-9.
Victoria .....	1223	2504
N.S.W. ....	1948	3717
Queensland .....	387	890
South Aust. ....	256	567
Tasmania .....	567	976
Western Aust. ....	307	399

Totals ..... 4688 9053  
Water power provides less than one-ninth of the total effective generating capacity of 2,000 million kilowatts.

# FIXOL

High-Grade  
Industrial

## COLD GLUES...GUMS...PASTES

A Grade for Every Trade — AUSTRALIAN-MADE

Manufactured by

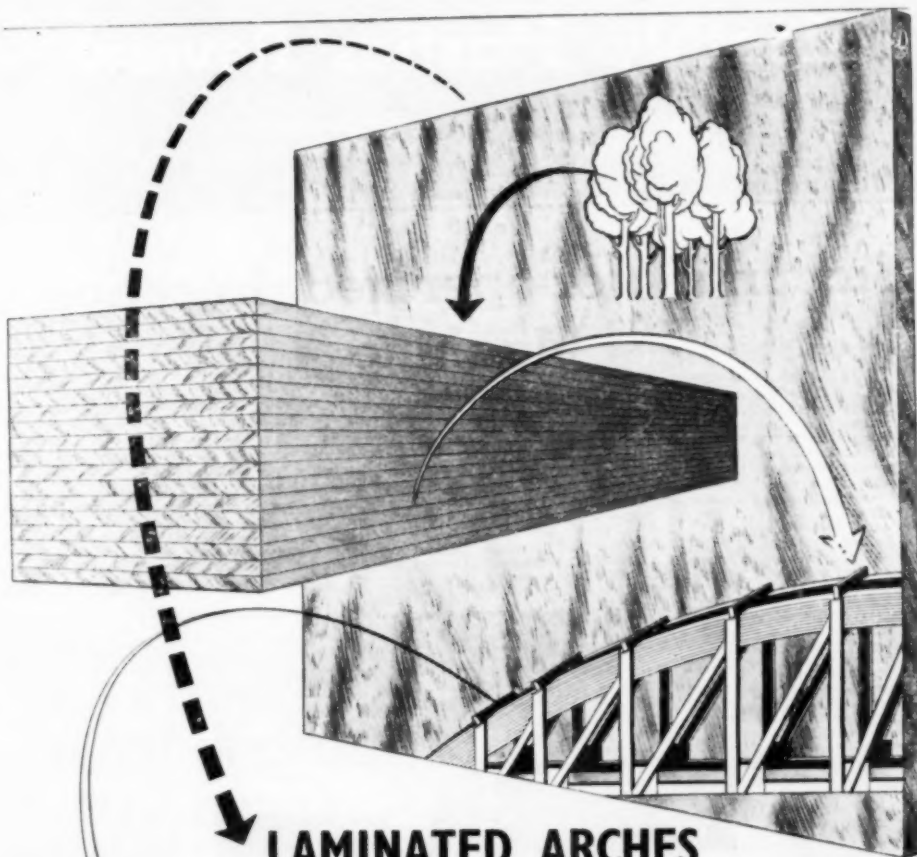
## W. E. WOODS LIMITED

Phones: FA 1191, FA 1192, FL 4449.

38-42 COLLINS STREET, SURRY HILLS, SYDNEY

AGENTS: H. W. Woods Pty. Ltd., Melbourne; O. A. Parr, Adelaide; L. F. Harrison & Co., Brisbane; H. Stone, Ltd., Perth.





## LAMINATED ARCHES

**MODERN! ECONOMICAL! DURABLE!**

The manufacture of urea formaldehyde adhesives by Beetle-Elliott Ltd., has simplified and improved the construction of laminated wood arches. Glue-lines are waterproof and immune to attack by micro-organisms. Properly designed arches are capable of withstanding all the stresses of modern cantilever construction.

Investigate the advantages of laminated wood construction using Beetle Cements with your architect before committing yourself to the expense and delays associated with hard-to-get materials.



**BEETLE-ELLIOTT LTD.**

35 TERRY STREET, ROZELLE, NSW. Telephone WB 2521  
219 CANNING ST., CARLTON, VICTORIA. Telephone FJ 4847



## Monthly Plastics Review

A special section published monthly with the object of contributing to the progressive development of the Plastics Industry in Australia.

# Accumulator-operated Injection Machine

ONE large and successful custom moulder who has been a compression moulder for 30 years—and in the injection field practically since that method was first used, has disclosed for the first time the details of his special methods and machines used for injection moulding.

About 17 years ago, when this organization had but one plant, its board of directors decided to buy one of the small early-model injection machines. It was never even uncrated because the moulder's chief engineer had decided he could build a better machine for less money.

The project of building a better machine was not as simple as it first appeared. In fact, more than a year elapsed before even the smallest thermoplastic parts were accurately and satisfactorily produced—and then the first machine built by them was discarded and replaced by a stronger one. Even after 17 years, refine-

ments are still being incorporated in the company's special injection machines to increase capacity as well as over-all efficiency. To-day they have three plants; two of them have upwards of 40 of these injection machines, the larger ones having a proved top capacity of 200 ounces.

### TRANSFER-TYPE PRESSES.

Basically, says an article in "Modern Plastics", the machines

mould is a special sprue nozzle through which the moulding material is injected.

Each strain rod is equipped with a stop on which the bolster plate rests when the mould is in the open position. Heavy spiral pushback springs are assembled on each strain rod between the top of the bolster plate and the under side of the head of the press.

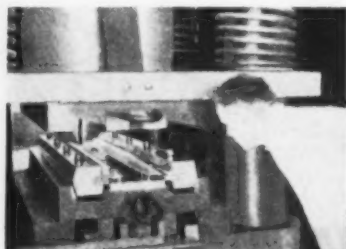
main ram then continued to descend, thus parting the mould halves.

The injection piston is permanently fixed on the under side of the head of the press; hence it comes out of the injection chamber as said chamber is forced down by the pushback springs. Moulding material is loaded into the injection chamber when the machine is in this open position.

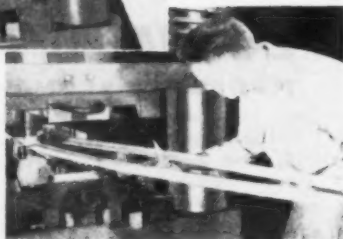
### MOULDING OPERATION.

The injection moulding operation with this type of equipment is accomplished as follows: With the injection chamber loaded with material, practically all of which is plasticized, hydraulic pressure is admitted to the main ram. As the ram moves upwards, the two halves of the mould meet and close. As the ram continues upward, it raises the assembly composed of the press bed and the lower half of the mould, the upper

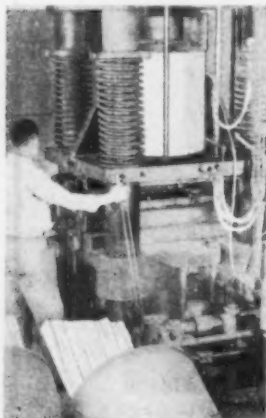
(Turn to page 42.)



(Left): After injection cycle is completed, mould is opened. Movable side cores for moulding undercut slots in 54-in. long strips are raised so that strips can be removed from the mould.



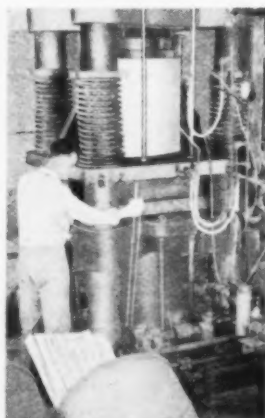
(Right): Operator has just removed a complete shot from this two-cavity mould. These strips are moulded from a special shock-resistant styrene.



With mould open, piston is out of the chamber. As operator pushes lever to first position, mould closes on low pressure.

are vertical, upward-acting, transfer-type presses, with special castings for the heads and pressure pots. A movable heated bolster plate is located between the movable press bed and head. The four corners of this plate are assembled to four bushings which are a sliding fit on the strain rods. The plate carries the upper half of the mould on its under side and the injection cylinder on the top. The lower half of the mould is mounted on the press bed. Connecting the injection chamber and top half of the

The set-up of the various components of the machine is as follows: When the main ram is in its fully lowered position, the two halves of the mould are parted, since the lower half of the mould is actuated by the main ram and also because the travel of the bolster plate carrying the upper half of the mould is controlled by the location of the stops on the strain rods. In other words, the pushback springs have forced the bolster plate to follow the downward travel of the main ram until the stops were encountered; the



Mould and chamber continue upward; piston presses on material; 5,000 p.s.i. is applied to main ram; injection is completed.

FOR **ABSOLUTE CONSISTENCY** IN MOULDINGS  
CHOOSE

**'NESTORITE'**

COMPRESSION MOULDING POWDERS

The wide acceptance of "Nestorite" for fine quality mouldings is due to their complete uniformity from batch to batch. If your contracts call for absolute consistency in finished mouldings, you can depend on "Nestorite." Consistent quality in powders gives consistent quality in mouldings.

SOLE AGENTS:

**A. S. HARRISON & CO. PTY. LTD.**

SYDNEY and MELBOURNE

**CUSTOM  
COMPRESSION  
MOULDERS**

AND

**INDUSTRIAL TOOLMAKERS**

*We are specialists in:*

PRECISION MOULDINGS  
FINE TOLERANCE WORK  
TRANSFER AND COMPRESSION

*Moulders for the Trade of:*

ELECTRICAL HOUSINGS  
INDUSTRIAL HOUSINGS  
SWITCHGEAR  
TELEPHONE EQUIPMENT  
RADIO PARTS  
VALVE HANDLES

Suppliers of Heavy Duty Pelleting

**HELIO PLASTICS Pty. Ltd.**

27 GROSE STREET, CAMPERDOWN, SYDNEY LA 3509

**BAKELITE  PLASTICS**



MOULDING MATERIALS, LAMINATED SHEET, SILENT  
GEAR MATERIALS, RESINS, INSULATING VARNISH

Technical Data and Prices available on application  
from the sole Australian Agents for Bakelite Ltd.,  
London:— SEND ALL YOUR ENQUIRIES TO:

**O. H. O'BRIEN (Sydney)**

30 Pitt St., Sydney (BW1308) and at 635 Elizabeth St., Melb. (F39303)

## FIRST IN THE FIELD . . . . .



The Andries organisation pioneered the craft of Diamond Cutting in Australia and were the first to undertake the manufacture of Industrial Diamond Tools in this country.



If you require Diamonds or Diamond Tools for any application, consult —

### E. ANDRIES & SONS PTY. LIMITED

245 PITT STREET, SYDNEY, N.S.W.

MA 3995.

19A BANK STREET, SOUTH MELBOURNE, VIC.

MX 4165.



No. 100 Tector Welding Goggle fitted with B.S. 679 lenses and made to standard specifications.

- Cool, comfortable, lightweight.
- Adjustable bridge.
- Strong plastic frame.
- Complete glare protection.
- Individually shaped Eye Cups.
- Extra clear, thin cover lenses.

Distributed by all leading warehouses, and manufactured by

### PROTECTOR GOGGLE CO.

The Goggle Maker of Australia for all Industrial Requirements  
443 Kent Street, Sydney, N.S.W. Phone: MA 4604.

## J. Gadsden Pty. Ltd.

*Manufacturers of*

PRINTED, AND PLAIN  
CANS. — STEEL CON-  
TAINERS. ALSO, CANVAS  
GOODS, CALICO AND  
HESSIAN BAGS

*Factories at*

AUSTRALIA—  
Melbourne, Sydney, Adelaide,  
Fremantle, Hobart and Albury.  
NEW ZEALAND—  
Wellington, Christchurch, Aus-  
land, and Dunedin.

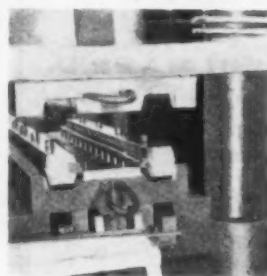
Head Office — Abbotsford Street, West Melbourne.

(Continued from page 40.)

half of the mould, the bolster plate, and the injection chamber. As these components continue upward, the fixed injection ram enters the injection chamber or cylinder. The entrance of the ram into the chamber creates pressure on the moulding ma-

of the mould as well as injection of the material involved.

All of these presses are equipped with hydraulic pushbacks, in addition to the spring pushbacks mentioned above. These hydraulic pushbacks serve to force the main ram downward when the mould is being opened. Thus there are two sets of pushbacks; spring to force the bolster plate downward to the stops, and hydraulic to force the main bed of the press down and open the mould.



Close-up shows 13 knock-out plus, intricate side cores for undercuts.

terial; as the upward movement continues, plasticized material is forced out of the bottom of the injection chamber through the sprue hole, along the runners, through the gates, and into the cavities of the clamped mould. Thus, one hydraulically operated ram accomplishes both clamping

When the first machine of this type was built 17 years ago, it was decided that it would be economical to operate the equipment from a central hydraulic power system. The plant at that time had available the standard pressures used for compression moulding—namely, about 600 p.s.i. for low pressure closing operations, and about 2,500 p.s.i. for the high pressure. Specifications of the first press for injection moulding were, therefore, designed around these two pressures. A great deal of time elapsed in futile attempts to produce good parts with these pressures. But because the main and only ram of this type of press accomplishes both clamping and injection, it was necessary to sacrifice either clamping pressure or injection pressure.

To illustrate the problem, consider a press equipped with a 10-in. ram and operating on 2,000 p.s.i. hydraulic pressure. This

ram would exert a total pressure of about 75 tons. With the mould closed and injection about to begin, these 75 tons would be exerted against the injection ram. Consider for the moment that this injection piston was the same diameter as the main ram of the press. That would mean that 75 tons would be exerted on the material in the pot. After the injection of the material had been completed, this same pressure (assuming that the material was all fluid) would be exerted on the material in the mould.

#### COMPARATIVE AREAS.

Now assume that the projected mould area of this mould was the same as the area of the injection piston; that is, that the areas of the clamping ram, the injection ram, and the mould are exactly equal. Under these conditions—and again assuming that the material is completely fluid—the assembly composed of the upper half of the mould, the bolster plate, and the injection cylinder would be practically floating. Under these conditions the mould would probably open and flashing would occur. In order to overcome this condition it would be necessary to either (1) reduce the number of cavities in the mould, thereby cutting down the projected moulding area, or (2) increase the diameter of the injection chamber thereby increasing the clamping pressure on the mould. If this latter course were followed, however, the injection pressure on the moulding material would be reduced. With any reasonable size mould the machine designer was faced with the necessity of increasing the diameter of the injection chamber beyond the point where sufficient pressure could be obtained to properly inject mould most thermoplastic materials.

The article points out that while it is true that the full pressure on the material in the injection chamber is not fully transferred to the material in the mould, the above example is cited merely to illustrate the clamping problem. At the time this work was being done—some 17 years ago—no data were available which would give a true indication of the changing difference in pressure between the material in the injection chamber and the material in the mould as the ram advanced. This pressure drop is not constant, and the factors having the greatest effect on it are: (1) state of fluidity of the moulding material; and (2) the amount of material in the injection chamber.

After much experimental work with this type of machine, a practical rule-of-thumb was worked out to the effect that flashing would occur if the projected moulding area was equal to, or greater than, the area of the injection chamber. It therefore followed that pressures higher than 2,500 p.s.i. were required for satisfactory operation of this machine.

The next step in the evolution of this transfer-type machine was the purchase of a special press designed for operation on 5,000-



## What do you Require in PHENOLICS?

**COMPRESSION  
MOULDED  
IN MEDIUM SHOCK RESISTANT  
PHENOLIC**

Get the benefits of a sound engineering approach to the moulding of your phenolic products, benefits that will save you costs—in economical mould designing . . . in carefully controlled production techniques . . . in the intelligent selection of the right phenolic with the correct mechanical, electrical or chemical properties for end use.

If your requirements are in **plastics**—and not necessarily phenolics—you'll like the way we get down to working with you on your specific needs.

#### Production Note—

**Product Illustrated:** Floor polisher housing. **Client:** Tecnico Ltd. **Dimensions:** 8 ins. high, 14 ins. wide. **Material:** Cotton flock filled, medium shock-resistant phenolic, walnut finish—the first moulding of its type produced in Australia.



## Walter Barr Pty. Ltd.

Division of International Products Ltd.

GILLESPIE AVENUE, ALEXANDRIA, N.S.W. MU 2467

PRODUCERS OF COMPRESSION, TRANSFER & INJECTION MOULDINGS IN MOST THERMOSETTING & THERMOPLASTIC MATERIALS



**NOW...ONE NAME ONLY FOR  
ALL MONSANTO POLYSTYRENE:**



In order to simplify the identification of Monsanto plastic moulding powders, all Monsanto polystyrenes are now known as Lustrex. This one trade-name covers all Monsanto polystyrene formulations including the one previously known as Lustron. However, the several Monsanto special formula modifications to suit particular applications will be designated with suitable suffixes as shown in the table at right. This will make for convenience in ordering the correct grade of Monsanto Lustrex polystyrene for your needs

**LUSTREX** One well known name for all Monsanto polystyrene.

**LUSTREX L** Regular polystyrene, formerly Lustron.

**LUSTREX LX** Heat-resistant polystyrene, formerly Lustron.

**Special formulations for specific uses**

**LUSTREX L-PIL**  
General purpose polystyrene

**LUSTREX L-PI**  
Transparent colours and crystal with superior clarity

**LUSTREX L-PIX**  
Improved mouldability over L-PI, available in crystal only

**LUSTREX L-PIA**  
Improved mouldability in transparent colours

**LUSTREX L-PIB**  
Translucent and opaque colours with exceptionally good mouldability

**LUSTREX LX-PIL**  
All the excellent properties of L-PI plus highest heat-resistance of any commercially available polystyrene

For full information about Monsanto's polystyrene, Lustron, as well as other Monsanto plastics, contact:

**MONSANTO CHEMICALS (Aust.) LIMITED**  
(Head Office) Somerville Rd., Braybrook, Victoria, servicing Victoria, South Australia and Tasmania

**INTERSTATE SALES OFFICES**  
New South Wales, Queensland

**MONSANTO AGENTS:**  
Western Australia, New Zealand



**SERVING INDUSTRY . . . WHICH SERVES MANKIND**

**THE PINNACLE OF ACHIEVEMENT  
IN AUTOMOTIVE VALVE ENGINEERING**

D.E.C. BRAND AUTOMOTIVE  
STATIONARY AIRCRAFT



**VALVES**

Made in Australia from 12% Silchrome  
with HIGHER CHROME CONTENT

— BY —

**DREADNOUGHT VALVE PTY. LTD.**

49 Ralph Street, Alexandria, N.S.W. 'Phone: MU 2501.

Distributors: C. & J. GEARS & AUTO PARTS PTY. LTD.  
6 Pelican Street, Sydney

p.s.i. line pressure. A special weight accumulator was converted to handle 5,000 p.s.i. by loading the weight container with iron ore instead of the scrap iron which had formerly produced a maximum of about 3,000 p.s.i. A new 5,000-p.s.i. pumping system as well as a complete new set of piping capable of withstanding this very high pressure was installed.

When the new press was finally put in operation, it was found that the new machine, operated at the higher line pressure, would satisfactorily produce thermoplastic injection moulded parts on a production basis. As time passed, many changes were made in the injection cylinder and the torpedo or spreader. Some injection cylinders were cored for high pressure steam for heating; others were designed to make use of electrical heater bands. All of these developments tended to increase the capacity and plasticizing efficiency of the injection cylinders. Although many of these presses have been converted to automatic operation, some are still hand-operated; even with the latter, as many as 1,800 complete shots have been pulled in a 72-hr. operating period.

A wide diversity of intricate and complicated thermoplastic parts has been produced on these machines over the past years. One large piece, the 54-in. long refrigerator cabinet breaker strip shown being moulded in a two-cavity mould, gives evidence of the ample clamping capacity of this type of equipment. Heavy pieces, including 8-in. and 10-in. transparent styrene storage battery housings, have been satisfactorily run on a production basis. Although this equipment may not be streamlined in appearance, its performance indicates that it certainly is streamlined from the standpoint of overall operational production efficiency.

**TAILORING MADE  
EASY.**

An unskilled person can quickly and easily turn uncut trouser legs into perfect cuffs at the desired length with a new transparent marking guide. Holes in the centre of the "Vinylite" plastic rigid sheet guide are laid over the

trouser seam with three tiny holes toward the top and the slot next to them centred over the chalk-mark at the desired length. Four holes at one side of the guide go towards the front of the trousers, angling the slots to provide the proper taper from front to rear. After chalklines are drawn, the guide is removed. Material below



Tailoring made easy.

the lower line is cut off; the second section is turned inside the trousers and stitched, then the remaining section is turned up outside and stitched—ready for pressing and wearing.

**IMPROVED CORD CON-  
STRUCTION.**

Refrigeration power supply cords are easier and less costly to make with a sturdy new plastic electrical insulating compound which can be applied in a single extrusion. Requiring no fillers and no braid, the new refrigeration power supply cord is heavier than the conventional plastic insulated lamp cord, but is simpler and less costly in construction than, for example, the standard refrigeration supply cord. Tested by Underwriters' Laboratories and listed as suitable for supplying power to electric household refrigerators, small frozen food cabinets, freezers and other refrigeration assemblies where flexible cord has been accepted, the cord consists of two No. 18 or 16 Agw stranded conductors laid in parallel and covered with special plastic insulating compound, providing an integral



## Plastics?

"In these days of increasing production costs, wise men ask themselves, 'Can I make use of plastics in my product?'" In many cases the answer is "Yes," resulting in lower production costs, and often a more pleasing appearance of your product.

For that plastic component of your new project, consult us for dependable dies and mouldings.

## Sneddon & Kingston

10-14 RESERVE STREET, EAST PRESTON, VIC.  
Telephone: JJ 1536

SPECIALISTS IN INDUSTRIAL AND  
ELECTRICAL PLASTIC MOULDINGS

insulation and jacket with nominal thickness of 4/64 inch and nominal separation between conductors of 7/64 inch. In tests the new cord withstood five times the required slow-compression weight without short circuiting. In the test requiring no failure from the impact of a five-pound weight dropped from a height of four feet, the cord did not fail in flat position when the weight was dropped from nine feet, nor in edgewise position when it was dropped from five feet.

### BROOM BRISTLES OF PLASTICS.

Among the latest aids designed to make house-cleaning easier for the home maker are new efficient



Broom Bristles of Plastics.

lightweight brooms. The high-quality performance of these brooms is achieved with bristles made from Bakelite Styrene plastic monofilaments which ensure a longer broom life and greater cleaning efficiency.

Exhaustive testing has proved that these new bristles last five times longer than conventional types and sweep cleaner. These resilient bristles make a tedious chore easier since they sweep in half the time previously required

and are extremely light in weight. They also raise less dust, are fade-proof, dip clean in warm suds and eliminate the untidy appearance of broken bristles because of their high strength. Their non-softening qualities in water or soap solutions are augmented by their resistance to various ingredients associated with kitchens or spilled liquids including vegetable oils, alcohol, alkaline cleaning materials, and nail polish. Attractive as well as practical, the new Bakelite styrene plastic bristles may be obtained in brilliant colours including yellow, blue or red with matching bumpers while broom handles are of smooth, gold-coloured steel. Although at present the major application of these new bristles is in household brooms, large monofilaments may be used for heavy scraping type brushes and street-sweeping brooms.

### TUNED TO QUALITY.

The first portable electric organ ever made—this is the electric reed organ, illustrated, which could well put the rudiments of a piano education within the reach of every family. The instrument, composed entirely of Bakelite phenolic and styrene plastic parts, with the exception of the electrical components, weighs only four pounds, is as small as a table radio, yet gives the full-bodied, sustained tones of a grand organ. On its twenty-five piano keys, beginners can get the feel of a piano keyboard and learn how to play rapidly.

This is another example of how plastics technology is bringing the enjoyment of playing music—not just listening to it—into more and more homes. The invention of sound-transmitting devices (the radio, phonograph, motion pictures, television) has carried music of all types to a tremendous new audience. The result has been the greatest demand for music in the history of the world. Millions of people want to enjoy it, be uplifted by it—and, most important, want to play it themselves.

## Leave it to Marquis



Amongst our many standard mouldings may be the very item you are looking for. In any case, we would be pleased to advise and quote you for all types of custom moulding.

Long experience, extensive plant and technical skill have made Marquis the big name in Plastic Moulding.

MARQUIS PRODUCTS  
are manufactured by

*Commonwealth Moulding  
Pty. Ltd.*

242-246 PRINCES HIGHWAY, ARNCLIFFE, N.S.W.  
Telegraphic and Cable: "COMMOULD," Sydney. Phone: LX 1236 (8 lines).

## "SEAMLESS CONTAINERS"

—the inexpensive "tins" made of cardboard with tinplate lids—suitable for WAXES, POLISHES, SEALING COMPOUNDS, OILY AND DRY DISINFECTANTS, FERTILISERS and SIMILAR PRODUCTS.

Available from

**SEAMLESS CONTAINERS PTY. LTD.**

41 RILEY STREET, SYDNEY. Tel: M 3473.

## The QUALITY NAME in AUSTRALIAN PLASTICS



**SYNTHETIC RESINS &  
MOULDING POWDERS**

**TONWELL PTY. LIMITED, N.S.W.**

IN ASSOCIATION WITH

**CHARLES H. R. JOHNSTON PTY. LTD.**

JOHNSTON'S BUILDINGS

Cnr. CLEVELAND and BUCKINGHAM STS., SYDNEY

Tel. Address: "Konfederate," Sydney.

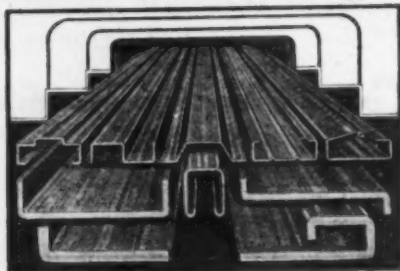
\*Phones: MX 2522-9.

Queensland: J. R. Hinchley, 62 Eagle Street, Brisbane.

South Australia: R. A. Haynes, 20 Franklin Street, Adelaide.

\* Regd. Trade Mark

## PRESSINGS for industry



**Any Size or Shape.** Pressings of any size or shape up to  $\frac{1}{2}$ " gauge and 15' length can be supplied from our 500-ton brake press, to meet the varying needs of manufacturers.

### Quick Delivery.

All inquiries are promptly attended to; deliveries of orders are immediate.

### Advisory Service.

A special technical advisory service is available to clients. Write, call or 'phone:—

**J. CONNOLLY LTD.**

43 MOUNTAIN ST., BROADWAY

P.O. Box 49, Broadway, Sydney.

Phones M 2587-8

## Chain for all Purposes

Crane and Pulley Block Chain, Coil Chain, Agricultural Chains, Saddlers' Hardware and Non-skid Chains, etc. Suppliers of Chain to Government Stores and Railways.

**BENNETT CHAIN CO. PTY. LTD.**

Makers of Chain for All Purposes

ALFRED STREET, VALLEY, BRISBANE, N.I., QUEENSLAND.

REPRESENTATIVES:

W.A.—T. R. LEWIS, 140 Murray St., PERTH. S.A.—S. W. SCRYMGOUR, Industrial Buildings, King William St., ADELAIDE. Tas.—ENSLAW & ENSLOW, 84 Liverpool St., HOBART. N.Z.—W. A. JOHNSTON, 84 Customs St., AUCKLAND. N.S.W.—HOWARD VAUGHAN (AUST.) PTY. LTD., 352 Kent St., SYDNEY.

This electric reed organ is a true musical instrument. Played on fifteen white and ten black keys, it has a range from low to middle to high C. Despite the in-



The new electric reed organ weighs only four pounds, is as small as a table radio, yet gives the full-bodied tones of a grand organ.

The organ's small size (11½ inches long, 7½ inches wide, and 5½ inches high), the keys are large enough to be played by any adult with ease and comfort.

These keys, which are washable and durable, respond to the slightest touch of the fingers. Playing them produces rich, vibrant notes and chords. When amplified, these sustained tones are virtually indistinguishable from those of the larger organs.

The organ is ready to play when plugged into an electric socket. It operates on 110-115 volt. A.C. current. When A.C. current is not available, the instrument can be played with the aid of an inexpensive converter.

Because of its ease of operation and its low price, this electric reed organ seems an ideal way for a beginner to start his piano education. (The organ's two-octave range corresponds to the middle section of the piano keyboard.) Fingering exercises and the normal pieces studied during the first several months of training can be readily practiced on this miniature organ. It has obvious advantages over the "silent practice keyboards" now in use.

The organ is built to wear well. The case is compression-moulded from phenolic plastics. The keys, comb, reed plates, compression chamber, and base are injection-moulded from Bakelite styrene plastics. All together, there are thirty-one plastic parts. These include one phenolic plastic case, twenty-five styrene plastic keys, one styrene plastic comb (with integrally moulded valves), one styrene plastic reed plate, two styrene plastic compression-chamber parts, and one styrene plastic base.

Colour is actually moulded into these plastic parts and will remain fresh and sparkling as long as the parts themselves. The case comes in wood-tone mahogany or walnut, duplicating the colour of most conventional organs, and it is styled to blend with any type of home furnishings. The gleaming case and keyboard can be



Outer case of this oil-bath air cleaner for fractional horsepower gasoline motors is moulded of transparent Tenite II cellulose acetate butyrate. Transparency of the case permits visual check of the oil level and the condition of the oil. The case holds a metal filter unit which cleans air before it enters the carburetor.

readily cleaned and polished with a damp cloth, since water cannot harm the plastic surfaces.

## Use This **DYNAMIC BALANCING** Service TO END VIBRATION, CUT COSTS DUE TO UNNECESSARY WEAR AND TEAR



We do not manufacture Balancing Machines for sale. Our business is to utilise our patent rights to perform this Balancing Service for our clients.

Our Dynamic Balancing Service put to work on your Fans, Rotors, Pump Impellers, Centrifuges, Shafts, Pulleys, Armatures, Turbines and Turbine Runners eliminates injurious vibration, provides smooth, efficient operation, prolongs the life of valuable equipment.

We are also equipped to provide experienced repair and maintenance service for all your electrical and mechanical equipment and give valuable information on how to achieve safe, more efficient operation from existing machines.

**JONES & RICKARD PTY. LTD.**  
MANUFACTURERS OF SPECIALISED ELECTRICAL EQUIPMENT  
525 ELIZABETH STREET, SYDNEY. MX 2097.

Curiously enough, the idea of a portable organ is not new. The first instrument of its type was



Maximum comfort in the bath tub is made possible by inflatable bath lounge made of Vinylite film. The lounge weighs a little more than 1 lb. and has a comfortable seat, back support, and head rest. Suction cups on the bottom hold it in place on the bottom of tub.

actually described in a thirteenth century manuscript, "Cantigas de Santa Maria." This organ rested on the palm of the right hand and was actuated by a bellows which was manipulated by the left hand. It was, of course, diatonic; the first chromatic organ keyboard wasn't built until Halberstadt turned the trick in 1361.

In this new portable organ, the keyboard is chromatic (contains sharps and flats), and manual power is replaced by a fractional horsepower motor. Here's how the modern organ works; the motor propels a blower fan which forces air into a compression chamber. When the keys are depressed, the air under pressure is released. This causes the

patented, special-built all-plastic organ reeds to vibrate, producing the sonorous tones of the instrument.

### IMPROVED JAR CAP.

Greater protection is afforded cosmetics, chemicals, and some food products by an improved jar closure which combines metal and plastic materials. By providing a more efficient seal, the new cap is said to prevent evaporation or vapour transmission, which eliminates loss of moisture, flavour, and bouquet.

The new product consists of a tin outer shell, and a moulded polyethylene inner shell which carries the threads. For its first commercial use, the closure is being adapted to a brand of cream deodorant.

The tin outer shell, crimped around the edge to anchor the plastic insert in place, provides the necessary mechanical strength



Polyethylene inner cap, held by tin outer shell, prevents contamination.

for a rigid, virtually unbreakable closure, while the resilient polyethylene inner shell eliminates the

(Turn to page 49.)

# BX p.v.c

Made by BX Plastics Ltd., London  
(Subsidiary of the  
British Kylonite Company Ltd. 1877).



Photograph by  
courtesy of  
Haines & Co.  
(Liberace Rainwear)

Over three quarters of a century of experience in the manufacture of thermoplastic materials has gone into the development of BX P.V.C. Because of its excellent quality it is in ever wider use throughout the world in all its forms. It can be supplied as Sheet — flexible, embossed and rigid; Moulding compounds; Extrusions.

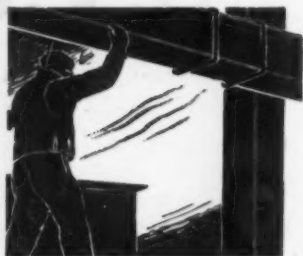
#### Australian Agents

D. C. BARRINGTON & CO., Commerce House, 328 Flinders Street, Melbourne;  
BARRINGTON HYDE PTY. LTD., MacDonell House, 321 Pitt Street, Sydney.

#### New Zealand Agents

J. YOCK & CO. LTD., P.O. Box 1002, Auckland.

BX PLASTICS LTD., CHINGFORD, LONDON, E.4, ENGLAND



# Steel THOUSANDS OF TONS

## Continuous Regular Shipments

10 GAUGE TO 28 GAUGE SHEETS (Black or Enamelling)  
ALSO DEEP DRAWING C.R.C.A.

Quantities of 10 tons or over are delivered ex-ships at capital cities. British Standard Specifications apply and inspection certificates are available with each shipment. Prices are reasonable.

Steel of the finest quality for almost universal application is available in continuous regular shipments. We can quote all sizes of Reinforcing Rods, Flats, Rounds, Angles, Channels, Plates, Steel Tubing, R.S.J.'s, Galvanised Iron Sheets, Water and Gas Pipes, Wire Netting, Conduit and Wire of all kinds. Available in True British Dimensions.

**EMM. YANNOULATOS** (OVERSEAS)  
**PTY. LTD.**

28 Martin Place, Sydney

Telephones: BW 2941-2-3

Telegrams: "YANNOULATOS," Sydney



IRC Resistors have solved many problems in the reduction of heat at point of contact — thus lengthening contact life with additional protection against failure.

There are sizes and types — Fixed and Adjustable — for EVERY industrial, electrical and radio requirement. The range includes practically any required resistor from miniature  $\frac{1}{2}$  watt sizes to the largest heavy duty types.

Our engineers will welcome the opportunity to co-operate — whatever your resistance problem bring it to IRC for a speedy, economical solution.

## POWER WIRE WOUND RESISTORS

SOLE AGENTS FOR AUSTRALIA:

**Wm. J. McLellan & Co. Pty. Ltd.**

BRADBURY HOUSE, 55 YORK STREET, SYDNEY. Phone: BX 2508



(Continued from page 47.)  
possibility of contamination. The braking action of the plastic against the metal permits the application of high torque pressures—yet the cap is easily unscrewed. In addition, an effective reseal is obtained. Finally the flexibility of the moulded threads compensates for irregularities in jar threads. Polyethylene's translucency provides legibility for printed matter on the inside of the metal shell. The closure is produced only in the 58-mm. size.

### PROBLEMS OF TRANSPORTATION OF ACIDS.

The problems of transporting dangerous-to-ship packages by air is being studied by the Packaging Branch of the Materials Laboratory at Wright-Patterson Air Force Base, Dayton, Ohio, U.S.A.

A new test chamber installed recently at the laboratory simulates flight conditions posed by temperature, altitude and vibration. The chamber, which resembles a large walk-in vault, can be changed



The gallon-size polyethylene container being ground under heel here eliminate the hazards involved in transporting acids in glass bottles. For surface shipment the glass containers are safe enough, but air transportation is more strenuous.

from sea level to 50,000 ft. altitude conditions in three minutes and can have its temperature lowered 100 deg. F. in that same period. The operating temperature range of the test chamber extends from 165 deg. F. above to 65 deg. F. below zero. An especially designed vibration table installed in the floor of the chamber carries loads up to 1,000 pounds and has cycles of 600 to 3,600 vibrations a minute. The Wright Field chamber is the first to combine all three elements of temperature, altitude and vibration.

Tests conducted by the Air Material Command's Packaging Branch have resulted in the development of distinctive containers for dangerous items such as acetone, sulphuric and nitric acid, varnish, cleaning fluids, ethers, ammunition, etc.

Outer packages are usually made of metal, fibre, wood, while cushioning may be cellulose fibre, sponge rubber, fibre glass of curled hair and latex. Insulation is provided by any material that would



## A. C. HATRICK PTY. LTD.

### The Source of Supply for—

### R. C. I.

SYNTHETIC RESINS  
CHEMICAL COLORS  
PHENOLIC PLASTICS  
INDUSTRIAL CHEMICALS  
Australian Works  
Batavia, N.S.W.

BECKAMINE—Amine resin solutions; BECKOSOLS—Pure alkyl, phenol modified, oil and phenol modified, and non-phenolic type resins; BECKACITE—Pure phenolic, modified phenolic and non-phenolic type resins; BECKOPOL—Phenolated copals; BECKOPHEN—Urea-formaldehyde resins; PLYOPHEN—Laminating resins—ESTER GUM; DEHYDROL—Dehydrated castor oil; CHEMICAL COLORS—Organic and Inorganic.



### HERCULES

CELLULOSE DERIVATIVES  
AND NAVAL STORES  
Hercules Powder Company  
Incorporated  
Delaware, U.S.A.

ETHYL CELLULOSE; CELLULOSE ACETATE; NITROCELLULOSE; C.M.C. (Carboxy-methyl-cellulose); PARLON chlorinated rubber; NAVAL STORES—YARMOR, pine oil, medium alcohol content; YARMOR 302, pine oil, high alcohol content; THANITE, terpene derivative; HERCULES WOOD TURPENTINE, steam-distilled; DIPENTENE No. 122; SOLVENOL No. 1; WOOD RESINS; VINSOL RESIN; TRUELINE pulverised core blaster; STAYBELITE non-oxidising resin.



EUSTON WHITE LEAD, dry and in oil; NUODEX NAPHTHANATE DRIERS, guaranteed metal contents, cobalt, lead, manganese and zinc; MANOX BLUES, bronze and non-bronze; OXIDES, black, green, red, yellow; ALUMINIUM powder and pastes; CARBON BLACK; TANNERS' REQUISITES, oils, etc.; KEENOK single roll paint grinding mills; ROGERS FULL FLOW VALVES.

Sole Australian Agents—

### A. C. HATRICK PTY. LTD.

68-70 Mentmore Avenue, Rosebery, N.S.W. •  
16-24 Little Pelham Street, Carlton South,  
N.3. Vic. • 27 - 29 Blair Street, Wellington, N.Z.  
Agents at BRISBANE • ADELAIDE • PERTH

Industrial Chemicals and Raw  
Materials for Surface Coatings



# Electroplaters prefer GLEAMAX

the superior  
BRIGHT NICKEL  
process

by

**CANNING**

Gleamax features

- No Cobalt
- Low Initial Cost
- Low Upkeep
- Simple Control
- Consistent Performance
- One Brightener

Distributed by . . .

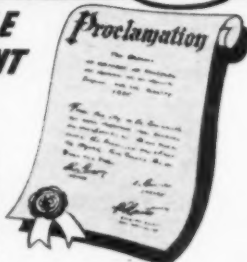


Milestones in our National Progress N°5

**R.T.**

**RESPONSIBLE  
GOVERNMENT  
GRANTED...**

N.S.W. 1855  
Victoria 1855  
Tasmania 1856  
Sth. Aust. 1856  
Q'land 1859  
West Aust. 1890



Decentralised government brought progress to every section of our continent. Cities grew and trade and commerce prospered.

Primary production then depended almost entirely upon imports for its machinery but a new spirit of self-reliance was developing and a few years after the turn of the century the Nation witnessed the founding by Ronaldson-Tippett of an enterprise dedicated to the service of the Nation's primary producers.

Approaching the half century of its establishment, the Ronaldson-Tippett Organisation looks forward to the future with faith in the Nation and its people.



**RONALDSON BROS & TIPPETT LTD.**

(Incorporated in Victoria)

Head Office: BALLARAT, Victoria.

prevent the transfer of heat and cold to the contents of the package, such as cork and asbestos. An air space often provides the most suitable insulation.

As an example of containers developed by the AMC's Packaging Branch, hydrofluoric acid is transported by air in a pilable bottle of polyethylene. A specially designed container of the same material is used for battery electrolyte for spare aircraft batteries. Thermometers and other mercury-filled items are packaged in outer containers of metal. The main problems of air transport are presented by extremes of temperature and pressure, which, of course, vary greatly with altitude. Pilable bottles of polyethylene it is said will solve many of these problems.

graved plastic cable-end ferrule.

Due to its durability, neatness and legibility, the last has always been regarded as the most satisfactory method of identification, but even this has its disadvantages, as many firms find it impracticable to carry large stocks of these specially engraved ferrules. In order to eliminate this difficulty, a British firm has designed a fully interlocking plastic ferrule consisting of several units,



Plastic ferrule for identification.

## CABLE END IDENTIFICATION SIMPLIFIED.

To simplify identification in complicated electrical circuits, the use of some form of cable marker is now becoming standard practice. Various forms of marker have been employed, ranging from the hand-written paper tag to the more elaborate thimble-shaped, en-

each of which is engraved with a single digit or letter. From these an almost unlimited number of code numbers or combinations can be built; in fact, more than 1,000 different identifications can be made up from a stock of ferrules numbered from 0-9, using only a three-figure code.

To prevent the digits or letters from movement, each ferrule unit is made with a key and keyway (see illustration), which ensures



Efficient press operation depends upon an efficient pump—the Electraulic Pump is especially suited to self-contained presses. It is direct driven from a 1,500 r.p.m. motor, gives a high volumetric efficiency (97%) at this speed and is remarkably smooth in operation. "Electraulic" Pumps are running year in, year out, on heavy usage without maintenance or renewals, at pressures up to 8 tons per sq. in.

## ELECTRAULIC HIGH SPEED HYDRAULIC PUMPS

97% Volumetric efficiency

**TOWLER BROS. (Patents) Ltd., Rodley, England**

Australian Representatives:

**N.S.W.: H. G. THORNTON & CO.**

45 MARGARET STREET, SYDNEY.

Phone: BX 5803.

**VICTORIA:**

Horrocks Renbush Pty. Ltd., 517/9  
Little Collins St., Melbourne.

**SOUTH AUSTRALIA:**

E. Treloving & Son Ltd., Light Square,  
Adelaide.

**TASMANIA:** Douglas & Fraser, 41 Paterson St., Launceston.

**QUEENSLAND:**

Parbury, Henty & Co. Pty. Ltd., 106  
Edward St., Brisbane.

**WESTERN AUSTRALIA:**

S. Y. Carnworthy, 69 St. George's  
Terrace, Perth.

that they can only be assembled with the engravings in line and cannot come out of alignment at any time. These ferrules can be supplied in black with white engraving or vice-versa and other colours can be supplied to order.

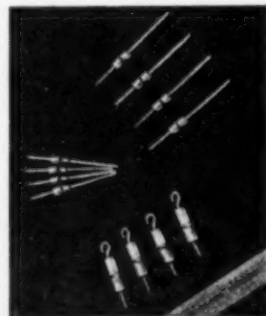
Entry of cables from both right and left, without one side reading "upside down" is provided for by ferrules being engraved for either hand as required.

## FLUOROCARBON MOULDINGS FORM SEALED TERMINALS.

Because of its unusual properties, a relative newcomer in the plastics field, has found a number of special applications. For example, certain hermetically sealed terminals called for a mouldable insulating material which would resist high operating temperatures, low ambient temperatures, salt water immersion, corrosive atmospheres, and other difficult conditions to which it may be subjected.

The only material which combined all these qualities and thereby made it possible to pro-

duce the terminals proved to be, this material, a high polymer of trifluorochloroethylene, which has good electrical insulation pro-

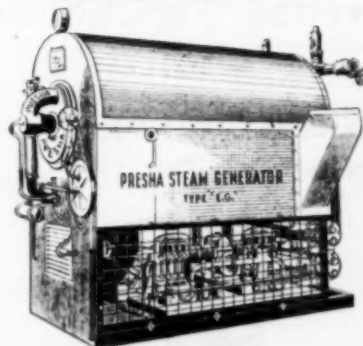


Individual hermetically sealed terminals are fluorocarbon insulated.

erties, is virtually invulnerable to any corrosive action, and can stand temperatures as high as 390 deg. F.

THE MOST MODERN — ECONOMICAL — EFFICIENT —  
RELIABLE STEAM GENERATING PLANT. FOLLOW THE  
EXAMPLE OF HUNDREDS OF OTHER STEAM USERS,  
INSTALL A

## "Presha" Automatically Controlled Steam Generator



THE "PRESHA"

(Automatically Controlled Steam Generator)

The original and only "PRESHA"—covered by world patents, hundreds in constant use in Australia and overseas. Large and small steam users, your steam requirements of any capacity supplied—fitted with the "PRESHA" patent automatically controlled modulating fuel oil burner using diesel or bunker fuel oil—a full head of steam in five minutes—efficiency guaranteed 80%—entirely automatic in operation—unlike a steam boiler, there is no danger risk—a "PRESHA" steam generator cannot explode—entirely an Australian invention made in Australia by Australian engineers using all Australian materials and equipment.

Write at once for Illustrated Brochure.

Just a Few of Our Many Recent Orders:

BOVRIL LIMITED, England, 8-100 H.P. Generators, total 800 H.P., for their new works on the Katherine River, North Australia.  
The COMMONWEALTH WHALING COMMISSION, 4-100 H.P. Generators, total 400 H.P., for the Whaling Station, Carnarvon, Western Australia.  
The NATIONAL UNIVERSITY, CANBERRA, 4 Generators.  
NUFFIELD ORGANISATION, SYDNEY, 4 Generators.

Ask for a list of users. Get their opinion, there is no better recommendation. "PRESHA" Steam Generators are manufactured by

## PRESHA ENGINEERING CO. PROPRIETARY LIMITED

In their factories in each State of the Commonwealth:

South Melb.	Sydney	Adelaide	Brisbane	Perth
Victoria:	N.S.W.:	South Aust.:	Queensland:	West Aust.:
City Road	Botany Road	Gibson St.	Charlotte St.	Wellington St.
Head Office	Waterloo	Bermondsey		

Overseas Enquiries Handled by

PRESHA OVERSEAS (Corporation) Pty. Ltd., 1 Bent Street, Sydney.

The first such terminals were single-contact terminals. Multi-contact transfer moulded terminals, with the metal parts moulded-in, have since been developed.

## VINYL DISPERSION RESIN.

The news from overseas that a plant for the manufacture of a new Vinylite dispersion resin, would be ready for production next year gives further concrete evidence of the remarkable growth in the use of vinyl dispersions.

A dispersion resin is generally defined in the trade as one which

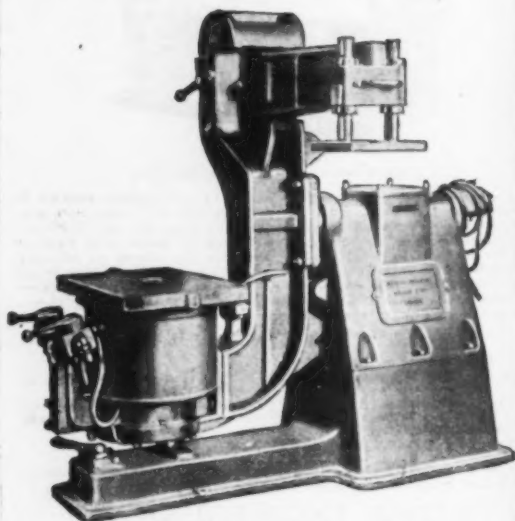
can be suspended in a liquid. Plastisols and organosols are of this nature, a plastisol being a dispersion of resin in plasticizer and an organosol a dispersion of resin in plasticizer and diluent. The same-type resin is frequently used for both. Dispersion resins are also frequently called paste resins. Principal uses for dispersion resins so far have been fabric and paper coating, slush moulding, and dip coating.

So popular have these resins become in the fabric-coating field that it is now estimated that over half of the coated fabric manufactured to-day is processed by the

# FOUNDRYMEN!

Increase Production  
with

PNEUMATIC JOLT-SQUEEZE  
TURNOVER MACHINE, TYPE A.T.



FULL RANGE  
QUICK DELIVERY BY  
BRITISH MOULDING MACHINE CO.  
LTD., ENGLAND

Specialists in all types of moulding  
machines

Contact Sole Australian Representatives:

**C. EBELING & SONS PTY. LTD.**

Castlemaine St., Yarraville, Melbourne

Phone: MW 2255

Telegrams: "EBELING," Melbourne

SEND FOR FREE ILLUSTRATED FOLDER OF  
COMPLETE RANGE OF MOULDING MACHINES.

CE2-HP

## ELECTRO-TIN PLATING

OUR Plating Department can quote you for your requirements in Electro-tin Plating of any desired thickness. Our modern equipment has a capacity of up to 36 square feet of plated surface and we specialise in the plating of tubing inside and out up to 20 feet in length. For further particulars and quotes, 'phone Mr. Yeomans, FW 5167.

**GORDON BROS. PTY. LIMITED**

120 UNION STREET, BRUNSWICK, N.10.

**MARTIN WILSON BROS. PTY. LTD.**

200-214 MARY STREET, BRISBANE

Queensland Distributors:

BLACK & DECKER (Aust.) Pty. Ltd., Portable Electric Tools.

TECALEMIT (Aust.) Pty. Ltd., Industrial Lubrication Equipment.

"MINTEX" BRAKE & CLUTCH LININGS, for all Industrial Purposes. "SERVEX" EQUIPMENT.

HARRINGTON INDUSTRIAL PISTON RINGS (up to 42in.).

Stockists:

"Herbrand" and other Engineers' hand tools, etc.

We are open to represent other factories as  
Merchant Distributors

spread-coating method using dispersion resins. A considerable part of the spread-coated vinyl fabric has replaced the older type which uses nitrate coating. It is also presumed that the new resin will make inroads into the paper-coating field which has been dominated by solution-coating resin.

The advantage of the new dispersion resin over its older resins sold for this purpose is that it can be dispersed more easily. In fact, it is practically a stir-in-resin with no other equipment than a pony mixer required for preparation. Formerly it was necessary to use a ball-mill or paint-mill mixer.

Plastic was chosen because it offered the most inexpensive way of producing the desired shapes, provided a safe protective sheath for the knife; added attractiveness to the design; and gave the



Shade cutter has butyrate grip and cover. Marker is of same material.

tool a comfortable feeling when used.

Accompanying the cutter is a measuring unit, also of Tenite II, which permits clerks to cut shades accurately to any of the three widths normally required. The marker comes equipped with a 54-in. steel rule and screws for fastening it to a counter. A carry-home carton provides the cutter with added sales appeal.

## WINDOW SHADE CUTTER.

To provide retail-store employees as well as consumers with a convenient device for cutting down window shades to desired lengths, there has been developed a window shade cutter largely made of Tenite II cellulose acetate butyrate. The new tool is about the size and weight of a flashlight. It cuts to measure with speed and accuracy, is safe to use, and is reported to stimulate sales at shade counters. Considerable saving in counter and shelf space is also claimed for the new unit.

Dies were made so that both halves of the handle and cover are moulded in one shot. Moulding is accomplished on a 4-oz. machine.

# Modern Servo-Mechanisms

## Recent Applications of Electronic, Pneumatic and Hydraulic Control Equipment

Without doubt, one of the most important trends in engineering design is towards the conservation of manual effort. This does not only mean in the utilisation of power which can be controlled with small expenditure of energy, to perform work in excess of that possible by unaided manual effort but, through the functioning of correctly designed controlling devices, to carry out a multiplicity of operations which, if controlled individually by manual methods, would, in many instances, require considerable duplication of manpower.

THE objective of these "slaves of industry" is not in any way restricted to the conservation of manpower, for applied to many operational and productive processes, control may be achieved to secure a degree of efficiency and accuracy that would not be possible, if, in their performance, they were subject to the element of error always present in manual control.

From this it will be seen that the main purpose of a control system is to regulate, or govern, a flow of energy and thus not only do they vary in arrangement and complexity, depending on the nature of the functions they are intended to perform and on the required speed and accuracy of their operation, but they differ also according to whether their operation is independent of or dependent upon the flow of controlled energy.

Covering a wide field of application, the employment of servo-mechanisms in any one industry provides an inexhaustible subject for discourse and so permits a very brief survey only in article form, whilst, complete coverage offers a rapidly diminished picture. However, bearing in mind the similarity existing between various processes, it is of interest to review a few specific examples of electronic, pneumatic and hydraulic servo-controls employed to overcome practical engineering problems, as encountered in modern workshops, processing, and operating plant and transport; particularly so as the fundamental theory of servo-mechanisms constitutes a well-trodden path in technical papers.

### MACHINING OPERATIONS.

The term "servo" or "slave", as used to denote the accurate manner in which the output load follows the input load, is described by Frank H. Slade in "Machinery Lloyd". He refers to what may be regarded as the underlying principle of servo-mechanisms applied to controlling machining operations.

He describes a profile milling machine arranged for the duplication of a profile or model, so reducing an intricate machining operation to one which can be carried out by an unskilled worker.

Both master and workpiece are mounted on a common support, so

providing identical lateral displacement and the profile of the model is traced by a lightly loaded feeler gauge in its travel past the point of contact. Motion of the gauge about a pivot is transmitted to a differential device consisting of a pulley and cord, associated with a potentiometer and battery.

The other side of the differential device is connected to an extension of the frame carrying the milling cutter and which is arranged to be driven, to secure a vertical displacement, by a servo-motor actuated, through an amplifier, by the error voltage developed by the differential-operated potentiometer.

As the feeler gauge represents the input number and the frame constitutes the output load of the servo, it is pointed out that a downward motion of the gauge point causes an upward motion of the differential pulley, resulting in a corresponding potentiometer voltage being supplied to the servo-motor through the servo amplifier. For a proper electrical

connection polarity of the motor, the latter then drives the frame and milling cutter downward by an amount equal to the displacement of the feeler gauge in order to zero the differential voltage. Similarly, an upward displacement of the feeler point results in an equal upward displacement of the cutter.

The principle of employing a model to control machining operations has been extended to modern lathes. One, designed for an average production of 30 to 50 cranks per hour, is a two-spindle machine that will simultaneously rough or finish turn pin bearings on both spindles.

Two master cranks, enlarged duplicates of the crank to be machined, pattern the movement of tools on the lathe's two spindles and provide the input impulse for controlling this movement through the cycle of rapid traverse to start of cut feed movement to the sizing stop, and rapid return to starting position.

Rapid developments in the use of electronic servo-mechanisms are

observed in the manufacture of radio receivers, for, by this application, the complete operations of grinding, metallising, face milling and finishing of an integral part of the receiver is made automatic and continuous. In an interesting example the part, a small plastic plate approximately 7 in. square, forms the basis of the completed receiver and contains various grooves and depressions on each side, which, when filled, the metal and graphite by purely mechanical means become inductors, resistors, capacitors, potentiometer tracks, switch and other terminations and conductor paths between them.

A very brief survey of the processing plant described shows that a series of plates are placed in a loading mechanism, where their presence is photo-electrically registered by a master electronic control unit. Impulses from this unit operate a feeding mechanism that passes the plates on a rubber conveyor at regular intervals through an automatic grit-

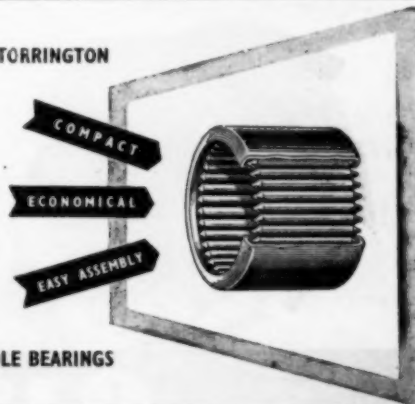
(Turn to page 55.)

### Where compactness counts . . . fit TORRINGTON

The low cost and compactness of Torrington Needle Roller Bearings make their application ideal in machine tools, portable tools, textile machinery or conveying equipment. These compact bearings are rapidly superseding the old type plain bearing, reducing friction and wear to a minimum, AND increasing the selling value of your equipment! Select Torrington Needle Bearings where compactness counts.

## TORRINGTON NEEDLE BEARINGS

For complete information ring, write or call

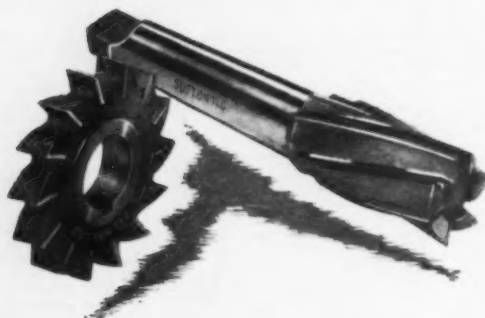


## BEARING SERVICE COMPANY OF AUSTRALIA PTY. LTD.

All Capital Cities • Adelaide—Duncan & Co. Ltd. • Hobart—John Hood Pty. Ltd.



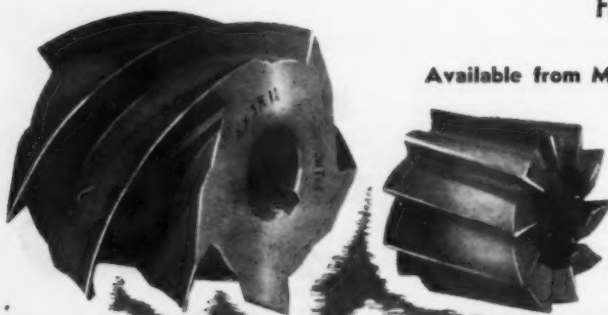
## TOOLS YOU TRUST



## *The* SUTTON RANGE

HELICAL PLAIN MILLS  
SIDE & FACE CUTTERS  
SLOTING CUTTERS  
ANGLE CUTTERS  
WOODRUFF KEYWAY CUTTERS  
GEAR CUTTERS  
SLOT DRILLS  
END MILLS  
FACE MILLS

Available from Merchant Houses throughout Australia



THE SUTTON TOOL & GAUGE  
MFG. CO. PTY. LTD.

Head Office:  
26-36 High Street,  
Northcote, N.16,  
MELBOURNE.

Sydney Office:  
196 Sussex Street,  
SYDNEY.



# SUTTON





## PRESS TOOLS

FOR

SHEET METAL STAMPING  
PLASTICS, CERAMICS, Etc.

## JIGS & FIXTURES

Consult us with your Tooling and Production Problems

**ROBERTSON & LANSLEY PTY. LTD.**

Moore and White Sts., Leichhardt, N.S.W. Phone: LM 1617.

(Continued from page 53.)

blasting machine, which, electronically controlled, does not commence operations until a plate arrives for blasting.

Each plate is checked for surface roughness by means of a photo-electric device before it passes to the metallising process. The arrival of a plate on the conveyor is perceived by an electronic control unit, which starts the process timing cycle and regulates the admission and ignition, in the correct sequence, of ethane, propane and oxygen; also starting and controlling the supply of zinc wire into the melting flame and admitting compressed air for atomising and spraying the molten metal.

After metallisation, the plates are conveyed to rubber rollers which feed them over the face plates of a face-milling group; consisting of three electrically driven milling heads, each mounted on independent slides capable of fine adjustment and equipped with diamond-tipped tools operating at a speed of 3,000 ft. per minute.

This machining operation is also electronically controlled and is so arranged that the cutting heads attain their full operating speeds before the metallised insulating plate is fed in. The metal is removed from each side of the plate until the insulating material is reached, so that the only metal remaining is that in the grooves and depressions in the plate and this forms the interconnected circuit complete with inductors, capacitors and connections.

After the circuit has been automatically tested, whilst still on the conveyor, plates containing resistors are passed to a cubicle for spraying with graphite through stencils that are automatically applied and indexed after having been automatically cleaned and dried. This spraying operation is automatically timed to ensure the accuracy of resistor values, control being effected by means of automatic resistor-testing equipment further along the conveyor, whilst consolidation and resistance stability of the graphite deposits are secured by burnishing.

Subsequent operations introduce the need for some manual aid, but, wherever possible, the finish-

ing processes are automatic and servo-controlled, even up to an automatic packing and sealing equipment, that is also part of the total production line, before leaving by conveyor for the outward stores.

### CUTTING AND WELDING.

Considerable importance may be attached to the recent advances in the design of electronic tracing heads for oxygen cutting machines, as these obviate the difficulty formerly experienced in cutting corners and the damage to drawing by tracing wheels during a repetitive run.

The electronically controlled tracer drive incorporates a spot of light no larger than a pin-head that is projected downwards, from a position adjacent to the tracer wheel, on to a drawing placed on the drawing table of the cutting machine and the burner follows that path traced out by the light along the line.

To operate a cutting machine fitted with the electronic tracer it is only necessary to lay a paper drawing on the table and switch on and it is claimed that the movement of the cutting burner is controlled as accurately as when using a solid type of template, or model; in fact, the drawing then becomes a template, simple to produce and easily modified.

The tracer head contains two motors, one for driving and one for steering. The driving motor, which has a variable speed, is employed to rotate the tracer wheel, the steering motor is employed to steer the vertical spindle of the tracer wheel drive, and this spindle is directly coupled by gearing to the projecting lens housing which throws the spot of light on to the drawing so that one revolution of the tracer wheel spindle imparts one revolution to the projecting lens housing.

The beam of light, which produces the spot, is set slightly off centre in the housing so that as this rotates the spot revolves in a circular path. The housing is set in relation to the tracer wheel, thus the spot is in front in the line of travel. Mounted on the side of the beam housing is a photo-electric cell and this is connected through a special circuit to control the speed and direction of rotation of the steering motor.



## HEATING ELEMENTS

IMMERSION HEATERS  
STRIP HEATERS  
HOT PLATES  
AIR, OIL, WATER  
PLATEN HEATERS



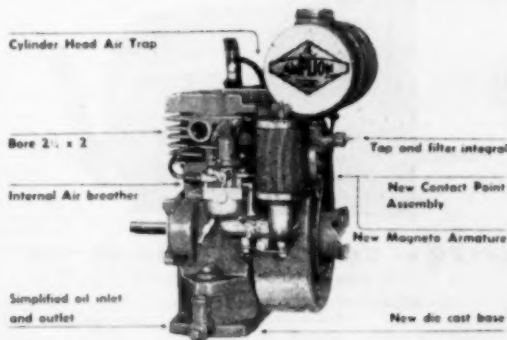
**GRIMWOOD ELECTRICAL PRODUCTS PTY. LTD.**

ELECTRICAL HEATING ENGINEERS

Anderson Street, Botany, N.S.W. Telephone: FJ 1752.

Interstate: C. F. Willers, Brisbane, Q.; A. E. Ackland Pty. Ltd., Melbourne, Vic. and Tas.; Topp & Farmer, Adelaide, S.A.; Radio & Associated Industries, Perth, W.A.

## NEW RELEASE of amazing 40 lb. 2½ Horse power Petrol Engine!



Opens up an entirely new field for operating pumps, portable power tools, generating plants, etc.

LIST PRICE: £39/10/-

SPECIAL DISCOUNT TO MANUFACTURERS

Full details from

**AMPLION (A'sia) PTY. LTD.**

36-40 Parramatta Road, Camperdown. LA 2828.

## The New Improved

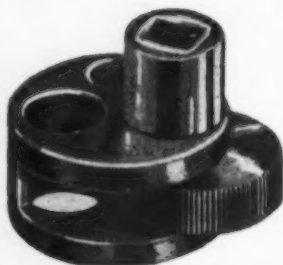
### ATCO STUD REMOVER

**GUARANTEED  
TOOLS**

Capacity, 1/4in. to 3/4in. Made of specially toughened and processed steel. Nickel plated.

Also makers of:

Flaring Tools  
Brakelining Drills  
Engineers' Knurls  
Centre Reamers  
Leather, Nail and  
Centre Punches  
Telescopic Gauges  
Marking Gauges  
Pipe Cutter Wheels  
Bow Saws, etc., etc.



## AUSTRAL TOOLS PTY. LTD.

40 ROWE STREET, SYDNEY

Telegrams and Cables: "GADITUS"

Tel.: BW 4791

**REVOLUTION**



**COUNTERS**



### LEVER or ROTARY TYPE-MODEL "CD"

A large engine revolution Counter

Specification—Counting capacity: 9999999.  
Brass Case: 9in. x 7in. x 3 1/2in. high.  
Weight: 13 lbs.

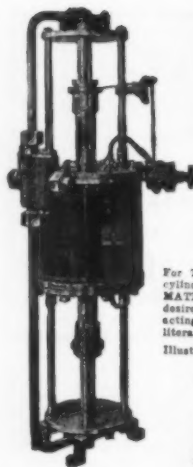
This Model used on—Ships' Engines  
Heavy Machine Tools  
Brewery Plant, etc., etc.

DELIVERY FROM STOCK

## ALPHA ENGINEERING CO. PTY. LTD.

WORKS: 82-88 Layton Street,  
CAMPERDOWN, N.S.W.  
Phones: LA 3296-7.

CITY OFFICE: 30 Grosvenor St.,  
SYDNEY.  
Phones: BU 2607, BW 7387.



## HYDRAULIC PRESSURE from your AIRLINE...

### with the AIRHYDROPUMP

For TESTING all types of castings, pressure vessels, gas cylinders, etc. **PRESSURE MAINTAINED AUTOMATICALLY.** Provides a small supply of liquid at any desired pressure up to 2,500 lbs. per sq. inch. Single-acting and double-acting models in 24 ratios. Write for literature.

Illustration shows double-acting model.

Agents in all States. Manufactured by  
CHARLES S. MADAN & CO. LTD., England.

Australian Agents:

**H. C. THORNTON & CO.**  
43 Margaret Street, Sydney. BX 3603

The drawing is made to any outline required, and the line of the drawing is made about 1 in. in thickness, the edge corresponding to the shape it is desired to cut out. In operation, light from the beam is reflected from the paper drawing and when the spot is half over the black and half over the white the amount of reflected light is such that the steering motor remains stationary. Immediately the tracer wheels cause the spot to move either more over the black or more over the white then a signal is sent to the motor which moves it back to the centre position again, the speed depending on the rate of change. Due to the pivoting action of the light spot, a regular motion is imparted to the steering spindle without any oscillations.

Developments in servo-mechanism design, in the field of electronic equipment, have also been applied extensively in recent years to the control of welding operations. By this means automatic machine welding becomes a practical proposition and in consequence, not only is the need for highly skilled operatives avoided, but high quality results are secured, even though the machines may be manned by operatives with little knowledge of welding processes.

In a description of large scale welding of railway carriages by batch production methods, it is observed, for example, that the welding of side sheet stiffeners is carried out by an automatic multiple spot welder. An outstanding feature of this machine is its automatic indexing and movement of the tables.

All indexing is accomplished by photo-electric cells, with the light source and cells mounted near one side of the table so that they may easily be controlled by an indexing pattern. Two rows of holes running the full length of the table are placed so as to pass

between the photo-cells and light sources. All holes are filled with loose rivets preventing light from passing through. When a rivet is pulled out of a particular hole, the light admitted operates the photo-electric relay to make a weld in the corresponding position. Any desired pattern of spots can thus be easily set up.

The second, parallel, row of holes controls retraction of the electrodes. By selecting the proper rivet to be pulled out of its hole, the electrodes can be made to retract in any desired position. The table is automatically controlled to such an extent that it will, if desired, move to the centre on finishing the work on one end and start welding on the work that has been loaded on the other end.

### HEAT TREATMENT.

Analogous to welding processes, the progress made in the heat treatment of articles bears a direct relationship to the advances made in applied servo-mechanisms. For example, the introduction of radiation pyrometers to comply with the need for a temperature-sensing device or input member, of very rapid response, has made possible the successful control of high-gradient heating in the steel industry.

A specific case of this form of control is found in the high-speed pre-heating of seamless steel tubes. Re-heating the tubes to the proper temperature required for final sizing is carried out in a new continuous high temperature, fast speed line of thirteen furnaces wherein the tubes, after passing through the piercing and reeling operations, require, on an average, only 0.487 minutes to attain the desired sizing temperature, whilst any increment of tube is in each furnace for approximately 0.037 minutes. It is claimed that it is only because of

(Turn to page 55.)

# BOHLER ☆ STEELS

## FOR ALL AUSTRALIAN INDUSTRIES

### FOR TOOL MAKERS OF QUALITY PRODUCTS

Bohler "CC"	} — Bohler High Speed Steels.
Bohler "Super Rapid Extra 300"	
Bohler "Super Rapid Extra MO"	
Bohler "Amutti"	
Bohler "Extra MG"	} — Non-shrink Die Steels.
Bohler "MST"	
Bohler "Special K"	
Bohler "MY Extra"	
Bohler "KL"	— Shock-resisting for Snaps, Punches, etc.
Bohler "WKZ"	— Shock-resisting for punches, shear blades, etc.
Bohler "GNM"	— Hard Die Steel for Ajax Bolt Heading Machinery, Die Casting, etc.
Bohler "V6N"	— Heat-treated ready for Drop Forging, Dies, etc.
Bohler "SSC" (Silver Steel)	— For Cold Heading Dies.
Bohler "KMC"	— Bohler Carbon Steels, etc.
	— Medium Carbon Low Chromium General Purpose Steel.

### FOR THE PLASTICS INDUSTRY

Bohler "EBK"	— The hobbing steel par excellence. Perfect flow; shining, smooth replica of the "Master Hob."
Bohler "NBS"	— For Master Hob.
Bohler "NBSN"	— Heat-treated Die Blocks (no further heat treatment necessary).
Bohler "WKW1"	— Corrosion-resisting Steel for Hobbing, and many other grades.

### FOR THE MINING INDUSTRY

Bohler Alloy Drill Steel, solid and hollow.	
Bohler "M751" and Bohler "M851"	— Hollow Drill Steel.
Bohler "Brownie"	— Solid Drill Steel.
Bohler Chronos, Pins, Bushes, Tool Joints, Elevator Shackles, Drop Forgings from half a lb. to about 4 cwt.	

Immediate attention to enquiries from any part of the Commonwealth

### BOHLER "ACE" SPECIAL STEEL FOR NITRIDING AND MANY OTHER GRADES

### STAINLESS AND HEAT-RESISTING STEELS IN SHEETS AND BARS

### BOHLER PNEUMATIC TOOLS

### BOHLER HIGH-GRADE WELDING WIRES AND ELECTRODES

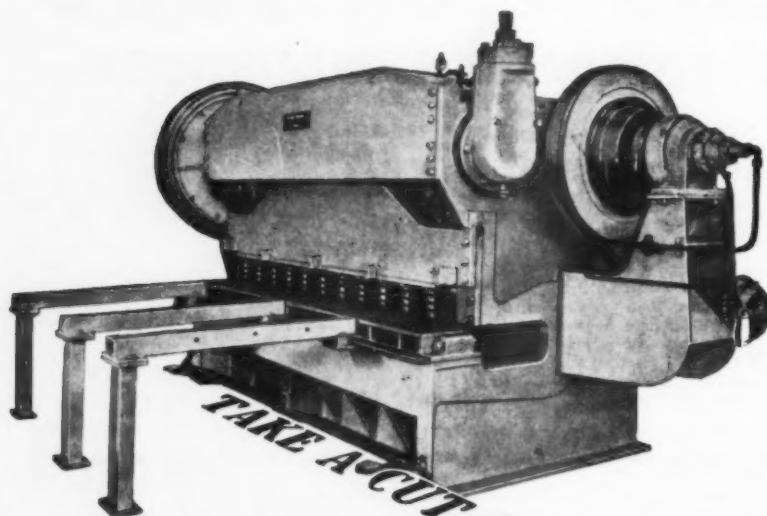
Sole Distributor for N.S.W.

**Wm. BARRON & SON PTY. LIMITED**

20-24 WYNDHAM STREET, ALEXANDRIA, N.S.W. Phones : MX 3436, MX 3437

(Wm. N. Barron, Sole Australian Agent for Gebr. Bohler & Co., Vienna)

Agents in other States to be appointed



**TAKE A CUT AT COSTS...**  
**WITH AN ALL-STEEL GUILLOTINE SHEAR**

Take a cut at your guillotining costs with a Welded Products' machine. Its blades will still be taking rapid, clean cuts long after several from a conventional cast frame machine are written off as scrap.

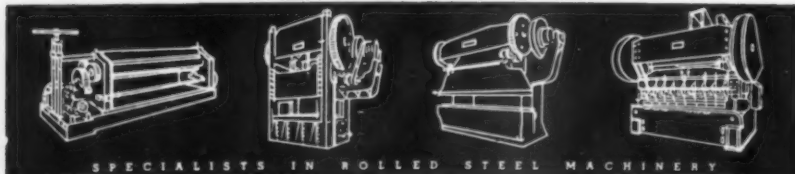
All in all, rolled steel construction means greater rigidity; greater rigidity means less deflection; less deflection means longer retained edges on blades, fewer regrinds, fewer replacements. It'll pay you, in greater output, less time off for blade regrinding and renewals, lower maintenance and lower operating costs, to replace existing equipment with high production Welded Products' guillotines.

Above: Welded Products' all-steel guillotine shears. Capacity: 8 ft. x  $\frac{1}{2}$ " M.S. Plate.

**Welded Products Limited**

94-96 O'RIORDAN ST., ALEXANDRIA, N.S.W., AUSTRALIA  
Phone: MU 2401 (3 lines). Telegrams & Cables: "Welprod Sydney"

★  
**Features:** Rigid back pressure beam, which supersedes the conventional fish-back cutting beam. Self-contained hydraulic hold-down system. Pneumatically controlled multiple disc friction clutch and interlocked automatic brake. Screw-operated self-freeing back gauge. Patent plate splitting device enabling plate to any length to be split in widths up to the maximum depth of the gap.



SPECIALISTS IN ROLLED STEEL MACHINERY

(Continued from page 56.)

the rapid response of the radiation temperature detector, plus the fast reaction of the furnace temperature to a change in fuel supply, that effective automatic control can be maintained; so that, under good average conditions, the tubes leave the final furnace at a temperature either plus or minus 20 deg. F. of the instrument set points.

In the high limit temperature control zones, the radiation detecting elements are located at the entrance end of each of the thirteen furnaces and sight on the moving tube just as it enters the furnace.

These elements are connected to recording electronic potentiometer pneumatic controllers, which regulate the supply of fuel to the furnaces by throttling diaphragm motor control valves fitted in the pre-mixed air-gas supply manifolds.

The set point, ranging from 1,850 deg. to 1,800 deg. F. on each of the tube temperature controlling instruments is adjusted manually for each size and type of tube to be run and rather than employ different temperature settings for each furnace, it has been found more practical to set all furnaces for the same temperature, since the tubes make their own gradient as they pass from furnace to furnace.

All thirteen furnaces are equipped with photo-electric cells at their entrance end, and the light source is so located under the path taken by the tubes when passing between furnaces that the light beam to the photo-electric cell is broken when a tube is present.

When no tube is present, with the light beam unbroken, the photo-electric cell actuates, through a time-delay relay, three-way solenoid valves, automatically cutting the furnace back to minimum fire by bleeding air from the diaphragm motor valves in the pre-mixed air-gas manifold line. A by-pass line, with a manually operated valve, is installed around each diaphragm motor valve to permit minimum fire to be maintained when the diaphragm motor valve is closed and, at the same time, the instrument balancing motor is de-energized. The electronic power pack in the instrument, however, remains energized.

In this manner, the recording pen remains at or near the tube temperature and the instrument is ready to assume control the instant the reverse action takes place, that is, when the light beam is again broken.

To afford maximum protection to the tubes as well as to the furnace proper, a system of automatic high-limit furnace temperature control is provided; the line of thirteen furnaces being divided into six zones for this purpose. Of the thirteen furnaces the first five zones comprise a pair of adjacent furnaces and the sixth zone, three furnaces; whilst only one furnace in a given zone is used as a criterion of temperature measurement for that zone.

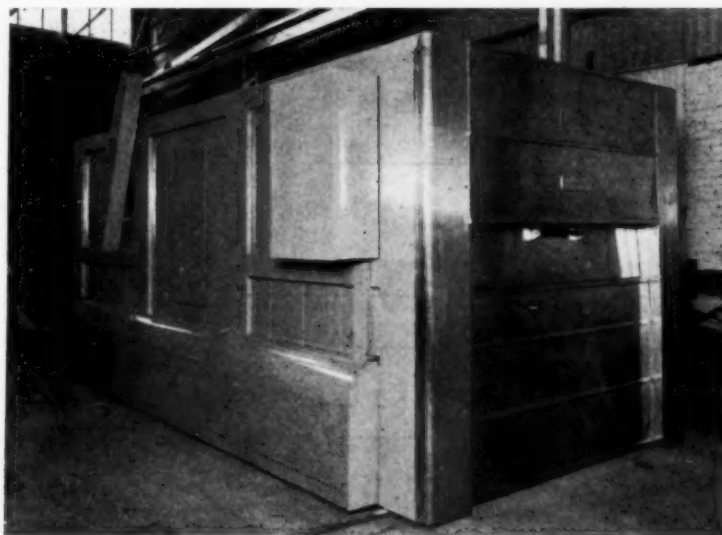
(Turn to page 61.)

*Hurricane-*  
FORCED AIR HEATING.

## WESSBERG & TULANDER PTY. LTD.

MANUFACTURERS OF INDUSTRIAL DRYING EQUIPMENT

### BISCUIT BAKING OVENS



Swinging Tray Type Reel Oven.

#### WHEN YOU ARE CONSIDERING:

- DRYING CHEMICALS, TEXTILES, TOBACCO, VENEERS, TIMBER, CERAMICS, LEATHER, FUR, REFRACTORIES, SOAP, PULP BOARD, FOOD PRODUCTS, CONTINUOUS SHEET MATERIALS.
- BAKING BREAD, BISCUITS, CORES.
- ENAMELLING CAR BODIES, REFRIGERATORS, Etc.
- COMPLETE FINISHING SYSTEMS, CHEMICAL DEGREASING, RUST-PROOFING, PAINTING, BAKING.

A FREE TECHNICAL SERVICE FOR YOUR INDUSTRIAL HEATING PROBLEM AND PLANT LAYOUT IS AVAILABLE  
OUR WIDE EXPERIENCE ASSURES YOUR COMPLETE SATISFACTION

*Address all Enquiries and Correspondence to:*

## WESSBERG & TULANDER PTY. LTD.

140-144 QUEEN STREET, ALEXANDRIA, N.S.W. 'Phones: MX1241, MX1552



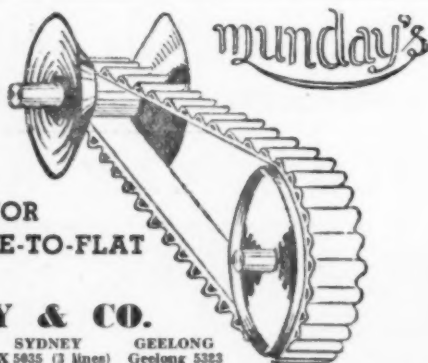
## MUNDAY'S

FOR  
VARIABLE  
SPEED DRIVES  
"RIPPLE"

LEATHER BELTS FOR  
VEE-TO-VEE & VEE-TO-FLAT  
ARRANGEMENTS.

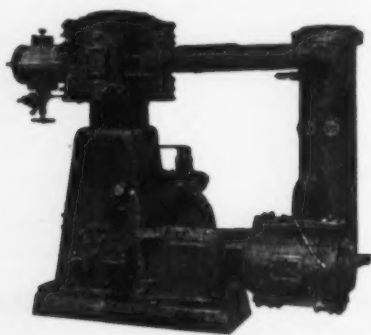
**JAS. MUNDAY & CO.**

MELBOURNE SYDNEY GEELONG  
Phones: MU 6015 (4 lines) BX 5035 (3 lines) Geelong 5383



## SERVICE

## TWO-STAGE ANGLE COMPRESSORS



These Machines are made in a number of sizes to give capacities ranging from 460 to 1,910 cubic feet per minute and larger, and for pressures up to 100 lbs. per square inch.

Drives are by direct connected Electric Motor in all sizes, also by belt from Motor or suitable Engine in the medium sizes.



**THOMPSONS (CASTLEMAINE) LIMITED**

CASTLEMAINE AND WILLIAMSTOWN, VICTORIA

AND AT MELBOURNE SYDNEY AND BRISBANE

AGENTS IN ALL STATES

## Works Managers — Plant Engineers

It might be "HOT AIR," but it could happen to you!

You cannot AFFORD to be without the total capacity your air compressors are capable of delivering, so . . .

IF your compressors are in need of a complete overhaul,  
IF you need an additional air supply to meet a special production job,  
IF you require extra air at annual or periodic maintenance shutdowns,  
IF you propose to demolish or alter concrete foundations,  
IF production is reduced by power failures,

THEN CONTACT

## AIR PLANT HIRE

7 The Grove, Coburg, N.13, Melbourne, Vic.

Phone FM 1686 and hire our portable air compressors, diesel or petrol-driven, together with pneumatic tools.

Rates on application.

(Continued from page 58.)

A radiation detector sights into a closed-end, silicon carbide target tube which is mounted through the furnace wall. This detector is connected to a circular scale indicating electronic potentiometer, calibrated from 1,200 deg. to 2,900 deg. F., and equipped with three adjustable electric contacts to provide the following control action.

Should the temperature at which the first contact is set be exceeded, the three-way solenoid valves are de-energized, causing the furnaces to be put on minimum fire. Should the temperature continue to rise, causing the second contact to be made, solenoid valve is energized, permitting air to bleed into the combustion controller and leaning the gas-air mixture. Finally, should the temperature still continue to rise, causing the third contact to be opened, solenoid valve is de-energized, cutting off the supply of gas entirely.

The temperature high-limit set points are fixed manually at the start of a run and, as with the tube temperature controllers, vary with the type of material being processed. Normally, the high-limit temperatures are within the range of 2,400 deg. to 2,600 deg. F.

Another heat treatment process in which servo-mechanisms are playing an important role is in the hardening of dies by induction heating methods. The article in "Machinery Lloyd" refers to a high-frequency induction-heating machine for progressively hardening press-brake forming dies, equipped with a sensitive electronic device which, correlated with the heat output of the work coil, automatically regulates the speed of the work transverse carriage to provide a uniform hardening depth for the full length of the die.

The operator selects the proper carriage travel rate for the depth of hardness desired and then connects the speed-control unit to ensure a uniform product.

### PLANT CONTROL.

It is now considered good practice to control operating plant automatically wherever possible. Thus, large, high-temperature, high pressure centrifugal feed pumps operated continuously at

constant speed may be cited as a good example. Here the manufacturers recommend the use of automatic control at flows less than 10 per cent. of their rated capacity.

One system is said to be designed to offer simple, reliable automatic control of the by-pass line. Control is based upon the direct measurements of the water passing through the pump rather than indirect indications of flow and the orifice plate is located in the suction side of the pump in order to measure the total flow through the pump, since, for pumps having separate balance devices, the leak-off from the balancing device is circulated directly back to a hot well, deaerator, or some other point in the low pressure water system.

In the main the functions performed are: (1) the amount of liquid flowing through the pump is measured, (2) a control valve in the by-pass line is opened to allow some liquid to recycle when the amount of liquid being pumped falls below a safe minimum, thus assuring the passage of a safe amount of liquid through the pump, (3) the valve in the recycle line is closed when the amount of liquid flowing through the pump is more than the minimum amount which the pump can safely handle.

It is stated that under normal conditions, when sufficient water is flowing through the pump, the valve in the by-pass line is kept in a closed position. Fifteen pounds per square inch of air pressure is applied to both the diaphragm motor valve and the relay. The relay will decrease the air pressure in the output line in direct proportion to the increase in air pressure in the input line from the flow controller, and vice versa.

In this case, no air pressure is supplied by the relay to an index mechanism located in the flow controller. The index functions to drive the set point index up-scale an amount proportional to the air supplied to it, but, with no air supplied, the set point index is allowed to fall down-scale until it engages the lower limit stop, which indicates safe flow for the pump.

If the boiler demand decreases enough so that the flow falls to

# GLOSCOAT

STRIPPABLE  
HOT DIP PROTECTIVE  
COATING



## THIS TOUGH, MODERN, TRANSPARENT PACKAGING MEDIUM

provides an unrivalled rapid method for thoroughly protecting metal parts and the more simple assemblies against corrosion.

Reduces packing time by at least 60% in man-hours, an important consideration in these times, offering simultaneously completely adequate protection for the coated article against all forms of corrosion, damage or abrasion, mishandling, etc., during transit and storage even under extreme conditions.

GLOSCOAT gives excellent protection in all conditions likely to be encountered, particularly in hot, humid atmosphere or in extremes of cold. Furthermore, the coating can be easily removed by a simple stripping operation, revealing the components ready for immediate use, lubricated with a film of pure lubricating oil, automatically exuded from the plastic coating.

NOTE: The removed GLOSCOAT can be remelted repeatedly for further use.

METHOD OF APPLICATION: GLOSCOAT is applied by a simple dipping operation, using a special melting tank, as illustrated, to avoid local hotspots and overheating of the plastic.

A temperature of 180°C.-200°C. is recommended for coating purposes, working within these limits, the thickness of coat can be varied to suit individual requirements. For example, a thickness of .080in. is applied when the article is dipped at 190°C.

GLOSCOAT is thermoplastic and sets almost immediately after the component has been removed from the tank.

### ADVANTAGES OVER OLD METHODS:

The light coloured transparent coating enhances the sales appeal of the coated article. For example, data engraved on gauges, tools, etc., encased in GLOSCOAT is visible to clients and articles can be handled freely without the danger of corrosion from the moisture of the fingers. Its high impact resistance gives protection against accidental damage through dropping.

- GLOSCOAT in one operation completely preserves and protects.
- GLOSCOAT is easy to apply and simple to remove.
- GLOSCOAT eliminates preservatives and desiccants.
- GLOSCOAT reduces bulk of packed articles, an important consideration if transmitted by air freight. Parts coated are ready for immediate use when received, as no degreasing is necessary.

## British Optical Co. Pty. Ltd.

Wingello House, Angel Place, Sydney. Tel.: BL 1344.



## TRADE WINDS

International trade is no longer dependent on the wind. Fast cargo steamers and swift air freighters carry the world's goods at speeds that would have amazed our grandparents. Yet even modern means of transport find following winds a help.

Like a steady trade wind, the Bank of New South Wales has aided international trade for over 130 years and has provided the essential financial link between Australian primary producers and manufacturers and the oversea buyers of their produce. Australia merchants, too, have been assisted in importing goods of oversea origin.

Today, thousands of importers and exporters value the specialized services of the Bank's economic, information, travel and overseas departments.

*Consult and use*

## BANK OF NEW SOUTH WALES

FIRST BANK IN AUSTRALIA

(INCORPORATED IN NEW SOUTH WALES WITH LIMITED LIABILITY)

AS 5050

## Arkon FLOW INDICATOR

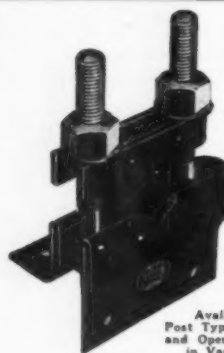
IS THE COOLING WATER CIRCULATING?  
IS THE BEARER GETTING THE OIL?



The oil or water spins a chromium-plated ring under a glass dome. If the flow stops, the ring stops spinning and warns you that something has gone wrong.

**IMMEDIATE DELIVERY**

N.S.W.: H. G. Thornthwaite & Co., 43 Margaret St., Sydney (BX 3603). VIC.: Horrocks Rosburgh Pty. Ltd., 517-9 Little Collins St., Melbourne. S.A.: E. Trelliving & Son Ltd., Light Square, Adelaide. Q'LAND: Parkbury, Henry & Co. Pty. Ltd., 108 Edward St., Brisbane. TAS.: Douglas & Fraser, 41 Paterson St., Launceston.



## A RELIABLE DAWN PRODUCT Dawn Pipe Vices



Available in —  
Post Type, Chain Type  
and Open Mouth Type  
in Various Sizes.

Manufactured by

**The Dawn Manufacturing Co. Pty. Ltd.**  
COBURG, VIO.

STOCKED BY PRINCIPAL HARDWARE HOUSES IN ALL STATES

the lower set, point, the flow controller supplies zero air pressure to the relay and diaphragm motor valve. The valve is spring-opened and permits recycle water to flow back to the pump. The relay actuates the index with fifteen pounds of regulated air pressure, thus driving the set point index upscale until it engages the upper limit stop. Cycling is prevented by setting this stop at a flow equivalent to the sum of the minimum safe flow plus the recycle flow.

The foregoing, as will be observed, only deals with electronic, electronic-pneumatic and pneumatic servo-mechanisms, but servo-hydraulic systems are of equal importance as these may be applied to effect centralized control and automatic sequence operation and control, to give servo-assistance to any hand-operated control and to power drive units, for example, where intermittent movement at controllable speed is required.

The subject is, of course, very wide and space precludes other than a brief review of a few applications. A good example of sequence operation as applied to modern plant is to be seen in large water gas generators. To enable the best possible gasification results to be obtained and to enable every particle of time to be fully utilised for gas making, it is essential that all valves are automatically timed and mechanically controlled.

The valves should be arranged for operation through mechanical power, be this by levers, hydraulic or compressed air motors, solenoids or electric motors; hydraulic operation being the most commonly employed means for large units. However, it is given that, in general principle, the various valve-controlling systems all serve the same object, namely, during a cycle of, say, three to four minutes to open and close a certain number of valves in their predetermined sequence and to come

into action and call for help in the event of being prevented from fulfilling this function.

It is of interest to observe that the valve controller, for the hydraulically controlled valve, consists of a series of small pilot valves which in their turn are operated either from an electrically or mechanically driven shaft, whilst the contactor gears for the electrically operated valve are mounted on a shaft similar to a clock, and the contactors on the same, make or break contact with motors and/or solenoids mounted on the various main valves.

## SONNERDALE LTD. TO MANUFACTURE "HYSTER" EQUIPMENT.

Sonnerdale Ltd., one of the leading engineering and gear-cutting plants in New South Wales, recently concluded an agreement with the Hyster Co. of Portland, Oregon, U.S.A., under which it will manufacture in Australia, under licence, the "Hyster" fork-lift truck and other material-handling equipment.

This is an important development, cementing still closer the industrial ties between the Commonwealth and the United States.



*General Engravers*

★ MACHINE ENGRAVING ★ ELECTROPLATING  
★ BADGES ★ MEMORIAL TABLETS  
★ BUILDING PLATES ★ METAL STAMPINGS  
★ NAMEPLATES ★ STREET SIGNS

END THE BOULEVARD & THE BROADWAY  
PUNCHDOWN N.S.W.

# METAL PRODUCTS MANUFACTURERS

*Manufacturers of*

THE FLA-SEAL OIL and GREASE RETAINER and an extensive range of automotive replacement parts.

*Also specialising in*

Assembled steel and sheet metal products for the Engineering, Motor, Aircraft and Building Industries.

## A. FLAVELL PTY. LTD.

283 HODDLE STREET, COLLINGWOOD, N.9, VICTORIA. 'Phone: JA 4123.

THE EXPERIENCE OF THE WORLD plus AUSTRALIAN WORKMANSHIP

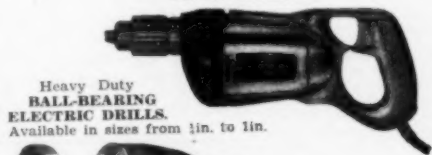
### SHER

## PORTABLE ELECTRIC TOOLS

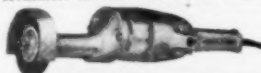
Available from Engineers' Merchants throughout Australia



7in. **HEAVY DUTY POLISHERS and SANDERS** for the Automotive Industry for Polishing, Mopping, Sanding, Wire-brushing and other surface treatment.



Heavy Duty **BALL-BEARING ELECTRIC DRILLS.**  
Available in sizes from 1in. to 1in.



**HANDGRINDERS** for Toolmakers with 2in. Grinding Wheel. For Foundries and Manufacturers with 4in. Wheel.

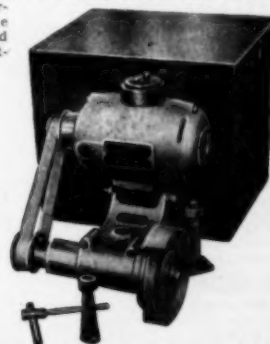


### DRILL STANDS

For quick conversion of Portable Electric Drills into Drill Presses.

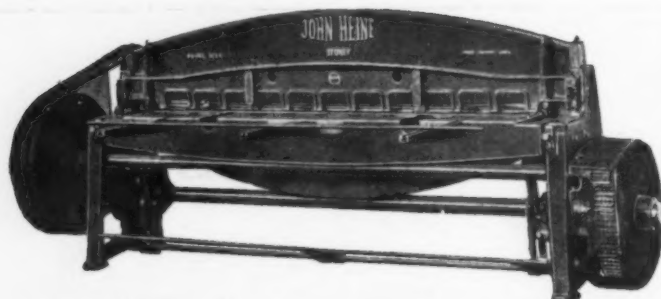
### 4in. PRECISION TOOLPOST GRINDER

A most versatile tool for production and toolroom. The ball-bearings are spring-loaded in the dust-proof quill.



RED POINT TOOL CO. PTY. LTD., 66 ST. JOHN STREET, PRAHRAN, S.I., VICTORIA, AUSTRALIA

THE AUSTRALASIAN MANUFACTURER  
[Page 64, October 28, 1950.]



# JOHN HEINE SYDNEY SHEET METAL • WORKING MACHINERY

## POWER-GEARED GUILLOTINE SHEARS

TO CUT 10G SOFT STEEL x 74in. AND 98in. LENGTH OF CUT  
+4 CUTS PER MINUTE

**ROBUST CONSTRUCTION . . . . . MODERN FEATURES**

Further Details from:

**JOHN HEINE & SON Pty. Ltd.**  
ALLEN STREET, LEICHHARDT, SYDNEY. — N.S.W.

Telephones:  
LM 1444,

Telegraphic Address:  
"Heinerson" Sydney

Distributors in:

Melbourne, Adelaide & Perth: McPHERSON'S LTD.

Brisbane ..... Engineering Supply Co. of Aust. Ltd.

New Zealand ..... John Chambers & Son Ltd.

J.H.A.Z.



# PATENT & TRADE MARK NEWS

Complete specifications lodged with the Patents Office are open to public inspection almost immediately after their lodgment. Interested persons are now able to obtain the details of an invention for which protection is being sought.

Provision is also made (Patents Act, 1946) for an applicant to obtain damages, if infringement occurs, from the date of publication of the application. A rule of practice has been established whereby an application will be examined more speedily when a prima facie case of alleged infringement is proved.

Particulars of the necessary procedure will be supplied by any Patent Attorney practising in the Commonwealth.

## PATENT SPECIFICATIONS ACCEPTED

### NEWSPAPER WRAPPING MACHINE.

138,060.—D. I. Munro.

Claim 1. An improved rolling and wrapping machine for newspapers and like articles comprising a hopper for receiving a stack of the articles, a selector for transferring the articles singly from the stack to a rolling mechanism

which is carried by a rotatable framework and rolls each individual article, means for feeding a wrapper to each rolled article and wrapping it around the same, means for securing the wrapper in position around the rolled article, and an ejector which removes the wrapped article from the rolling mechanism.

### APPARATUS FOR DEVELOP- ING PHOTOGRAPHS.

138,054.—H. A. Rigby.

Claim 1. Improved apparatus for photographic developing purposes, comprising a frame for

holding and supporting a relatively large number of negatives or the like while they are undergoing treatment in tanks or baths, the frame including upstanding side walls provided at relatively closely spaced intervals with vertically extending open-topped slots, a base formation having a longitudinally extending section provided with open-topped slots, slotted or lie members projecting sideways from said upstanding side walls, and a longitudinally extending upper member having vertically extending open-bottomed slots, the slots of all the members being aligned with each other sub-

stantially as and for the purposes specified.

### SPRING MOUNTING OF TYNES.

138,009.—R. S. Tilly.

Claim 1. In agricultural implements an improved spring mounting for tynes characterised by, a transverse shaft secured to the frame of the implement, a bearing member rotatable on said shaft and having a sleeve exten-

### GRIFFITH, HASSEL & GRIFFITH

Established 1895

Fellows of the Institute of Patent Attorneys of Australia. Fellows of the Chartered Institute of Patent Agents, London.

Asbestos House  
York and Barrack Streets, Sydney  
Tel.: BX 2040. Telegrams: "Myall"

PATENTS, TRADE MARKS AND  
REGISTERED DESIGNS

### PHILLIPS, ORMONDE, Le PLASTRIER & KELSON

ESTABLISHED A.D. 1868

CECIL Le PLASTRIER, GEOFFREY SLY, BERTRAM C. FITZPATRICK.  
TRADE MARK AGENTS — PATENT ATTORNEYS

PROVIDENT LIFE BLDG., 37-41 QUEEN ST., MELBOURNE

Telephone: MB 2594 (2 lines)

### Osborn F. Cartwright PATENT AND TRADE MARK ATTORNEY

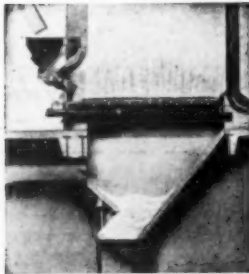
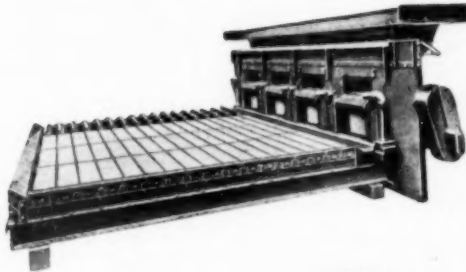
350 George Street, SYDNEY

Telephone: BL 1894

Fellow, Institute Patent Attorneys  
of Aust., Inc.



## BABCOCK-DETROIT SPREADER STOKER



TOP—Side view of Babcock-Detroit RotoStoker with power dumping grate.  
BOTTOM—Sectional view of Babcock-Detroit RotoStoker.



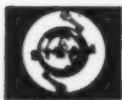
### For Medium and Moderate Sized Industrial Installations

The Babcock-Detroit RotoStoker is supplied with either hand or mechanically operated dumping grate, and is employed mainly for medium and moderate sized industrial installations.

This stoker has been demonstrated as capable of handling a very wide range of fuels, including bituminous, sub-bituminous coals and lignites, brown coal and mixtures of coke and coal.

One of its main advantages is its suitability in plants where the type or quality of coal delivered varies from time to time.

As suppliers of all types of firing equipment, whether for pulverised fuel, oil fuel, other mechanical types of stokers, or any other known firing method, Babcocks have the experience necessary to advise on the right equipment most suitable and economical to your needs.



**BABCOCK & WILCOX**  
OF AUSTRALIA PTY. LIMITED  
ENGINEERS AND CONTRACTORS  
HEAD OFFICE & WORKS - REGENTS PARK, N.S.W.  
Branch Offices and Agencies in all States

sion, a tyre carried on said bearing member, a collar secured to said shaft, a helical spring carried on said sleeve extension and adapted to apply tension between said collar and said bearing member.

### SAFETY DEVICE FOR ARC WELDING.

138,071.—R. C. K. Young and T. Sampson.

Claim 1. A safety device for arc welding apparatus, characterised by two relays arranged to control operation of a contactor for said apparatus, said relays being operated by alternating current or by direct current derived from a rectifier connected across the secondary of the welding transformer of said apparatus, one of said relays being designed to close when voltage across said secondary drops at the commencement of welding operations, and the other relay being designed to open when said voltage approaches a level dangerous to the operator.

### POCKET CLIP FOR FOUNTAIN PEN.

138,073.—The Lang Pen Co. Ltd.

Claim 1. A pocket clip for a fountain pen or like article wherein the retaining ring is in line with, or in the same plane as, the arm of the clip instead of being at right angles thereto and is adapted to be received in a slot formed for the purpose in the end of the article and to be prevented from outward displacement by a member carrying an abutment engaging the rear or interior of the slotted end of the article.

### ELECTRICALLY HEATED STEAM IRONS.

138,075.—National Pressure Cooker Co.

Claim 1. In a steam iron, in combination, a sole plate having a pressing face, heating means in heat conducting relation with the sole plate a boiler disposed to receive a limited amount of heat from said sole plate and adapted to hold water, means for transmitting steam generated in said boiler to the pressing face of the sole plate, and a metallic heat conducting member in heat conducting relation with the heating means, said member extending into the boiler and being adapted to heat the water to steam.

### ELECTRIC HEATING DEVICE.

138,079.—L. Mandl.

Claim 1. An electric heating device consisting of a U-shaped conductor supported by its ends from a holder through which current of a low voltage, namely 0.2 to 6 volts, preferably 1 to 2 volt, is supplied, said conductor not being supported on any other portion of its length.

Claim 7. An electric soldering or branding tool as described in claims 1, 2, 3, 4, 5 and 6 capable of being bent repeatedly to a shape most suitable for the work to be performed.

### SCREW FASTENING DEVICE.

138,080.—G. L. Ericsson.

Claim 1. In a screw device for fixing a screw in a structure such



### HOUSEHOLD AND INDUSTRIAL ADHESIVE

Supplied in 6-oz. tubes, pint, quart, gallon and 4-gallon tins

## REPAIRS EVERYTHING

### INTERSTATE AGENTS:

Miss and Insulating Supplies Co.,  
N.S.W., S.A., W.A., Q'land

Millen Bros., Leunceston, Tas.  
Reliance Trading Co., Hobart, Tas.

### ORMISTON RUBBER CO.

Mooroon Ponds, Victoria

### EXPORTERS — IMPORTERS GUTWIRTH & SONS PTY. LTD.

296 Collins Street  
MELBOURNE, VICTORIA  
Telephone: Cent. 4618

## You get MORE MILES

with—



by  
**HENDERSON'S**

Thoroughly tested — never heated — for  
PEP, POWER and LONGER LIFE — Hen-  
derson's PROVED Valve Springs — made  
from finest-quality steel — are THE Valve  
Springs for your car or truck when it's over-  
loaded... IMPORTANT. They're packed in  
convenient cartons too — to ensure the right  
type to use for your engine.

★ OBTAINABLE GARAGES AND LEADING  
WHOLESALESTERS THROUGHOUT AUSTRALIA.

M102-12

**HENDERSON'S**  
FEDERAL SPRING WORKS LIMITED

(Incorporated in Victoria)  
MELBOURNE HEAD OFFICE & WORKS: Alfred Street, North Melbourne, N.V. P/351  
City Address: 42 Elizabeth Street, Melbourne, G1  
SYDNEY: O'Rourke Street, Alexandria, N.S.W. W/1344

Let us speed up your Wire and Strip  
Forming on our Heenan & Froude  
4 SLIDE PRESS

WIRE STRAIGHTENING, POINTING AND  
BARREL NICKEL PLATING

**BRADSHAW AUTOMATICS PTY. LTD.**

147 CHAPEL STREET, ST. KILDA, S.2, VICTORIA

Telephones: LA 3226, (After Hours, U 9892), LA 4687.

Telegraphic Address: "BRADPINS."

## Quicker & Better Finishing

Speed up your output with

### GUNOL RAPID FINISHES

Every Colour, Matt and Glossy — Spraying or Brushing —  
Stoving or Airdrying — Excellent Durability, Toughness and  
Adhesion. LET US TELL YOU ABOUT IT.

**DAVIS LACQUER PRODUCTS**

37 NICHOLSON STREET, ABBOTSFORD, N.9, VIC.

'Phone: JA 2761

as a wall, roof and the like the combination of a screw and an end member for the screw which is in threaded engagement with the screw but which is non-rotatable in function, said member having prongs around the screw which are so adapted as to coact with a conical surface of the screw that upon rotation of the screw inwards in relation to the structure the prongs will expand and secure the end member in the structure before turning the screw to the fixing position, said member being tapered in the free end to form a nail point so that the screw and said member together will compose a fixing element which is primarily driven into the structure like a nail and secondarily fixed like a usual screw in the end member.

#### FLEXIBLE GUIDE MEMBER.

138,062.—Tecalemit Ltd.

Claim 1. A flexible guide member for guiding a slidable member in its movement, the flexible guide member being integral with, or securely connected to, the slidable member and being slidable within a guide surface in an envelope or housing and comprising or consisting of one or a number of flexible parts which is or are attached to the slidable member, and a peripheral edge part which is slidable in the said guide surface, the arrangements being such that if the peripheral edge part should encounter an obstruction which causes it to stick, then the said flexible part or parts will flex sufficiently to permit the said slidable member to move as required.

#### AUTOMATIC ELECTRIC ARC WELDING APPARATUS.

138,314.—Welding Supplies Ltd.

Claim 1. Apparatus for electric arc welding of the type described wherein means are provided for limiting the extent of movement of the carrier member towards the work, and wherein the welding rod holder is attached to said carrier by a swivel joint, means being provided for limiting the angular movement of said holder about said swivel joint in the direction away from the work.

#### TRADE MARK APPLICATIONS

94,774. "Falcon." Agricultural and horticultural machinery.—Pope Products Limited, Charles Road, Beverley, South Australia.

96,603. The word "Locke" incorporated in a label design. Insulators made of porcelain or earthenware.—Locke Incorporated, South Charles and Cromwell Streets, Baltimore, Maryland, U.S.A.

94,942. Label design showing, inter alia, the word "Douglas." Industrial trucks and electric de-

## LINSEED OILS of Guaranteed Quality

**MEGGITT LTD**  
the BLUNDELL SPENCE & CO. LTD.  
LINSEED OILS

Head Office: 67 YORK ST., SYDNEY.  
Box 1366, G.P.O., Sydney.  
Works: Parramatta, Melbourne, Adelaide.

## FACTORY EQUIPMENT

"BURNED" Lathe Chucks  
"MERCER" Dial and Cylinder Gauges  
"DING DONG" Hack saw Blades  
"MYFORD" Lathes  
"COLEY" Thermometers

**PAUL WITZIG & CO. PTY. LTD.**  
55 York Street, Sydney, N.S.W.  
Telephone: BX 3147

**SD SOLUBLE SILICATES**  
of Soda • Potash  
True to Specification.

Silicate & Dolomite Co. of Aust.  
Pty. Ltd. ALLEN STREET  
PYRMONT, N.S.W.

## WELDON HARDWARE



Manufactured by

**W. H. WELLS PTY. LTD.**

127-128 Abbotford St., Mth. Melb.

Interstate Representatives:

N.S.W., Qld. & N.Z.: Essex & Potts  
Pty. Ltd., 222 Clarence St., Sydney.  
South Australia: Wm. C. Keany, 141  
Rundle St., Adelaide. Western Aus-  
tralia: Associated Distributors, 200  
Hay St., Perth.

## HOBSON ENGINEERING CO.

★ REPETITION SPECIALISTS ★

301 HENDERSON ROAD,  
ALEXANDRIA, N.S.W.

Approved A.I.D. Inspectors.  
Capstan and Auto Lathe  
Work to 1 1/2 in. capacity.  
Thread Rolling, Press Metal  
Works, Sheet Metal Works,  
Steel Fabrication, Oxy and  
Electric Welding.

**LA3414 LA1871**

*Famed the  
World over*

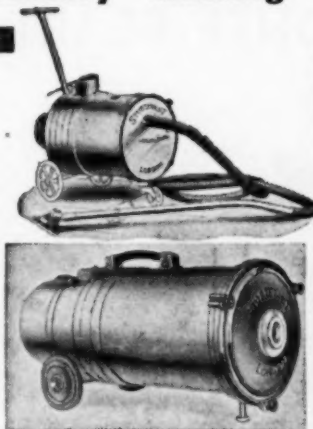
# sturtevant

THE ORIGINAL BRITISH  
TURBINE OPERATED  
INDUSTRIAL CLEANERS

**cut factory cleaning costs by 66%...**

Following the recent installation of Sturtevant Turbine-Operated Industrial Cleaning equipment in a large Melbourne factory, cleaning costs dropped 66%. This is a typic. Sturtevant achievement. Sturtevant's suction force and cleaning capacity is greater than that of other cleaners, yet operating costs are the lowest yet.

The three models illustrated are from the wide range which meets the needs of every cleaning job. Illustration 1 is a No. 5 Portable—for factories and stores. Illustration 2 is a No. 3 Portable which has several times the capacity of a house-cleaner, yet is light enough for a woman to use—suited to smaller factories, etc. Illustration No. 3 is a stationary Central Vacuum Cleaning Plant in a factory.



For full details and demonstrations  
contact the Australian Distributor—

**L. R. W. MOSS Pty Ltd**

13 BANK PLACE, MELBOURNE. MU 524

*Interstate Agents:*

W.A.—Messrs. Wyper Howard Ltd., Hay St., Perth.  
N.S.W.—R. Dean Clarke Pty. Ltd., Australia House,  
38 Carrington St., Sydney.  
S.A.—F. R. Mayfield Ltd., 225-7 Pirie St., Adelaide.

livery vans.—Douglas (Kingswood) Limited, Hanham Road, Kingswood, Bristol, Gloucester, England.

96.466. "Rubglas." Batteries.—Century Storage Battery Co. Ltd., Birmingham Street, Alexandria, N.S.W.

96.437. "Pedestrian." Sole leather.—Joshua Pitt Pty. Ltd., Gadd Street, Northcote, Victoria.

95.250. "Silcrest." Alphabetical indexing tags; file binders, etc.—Matthew Peace Sinclair, 12 Gadd Street, Northcote, N.18, Melbourne, Victoria.

89.809. Circular design of the letters GACO. Goods manufactured from india-rubber and gutta-percha.—George Angus & Co. Limited, Angus House, 152-158 Westgate Road, Newcastle-on-Tyne 1, Northumberland, England.

88.137. A label design of the letters "G.G." Gaskets, packing and hose.—Gardiner Gasket Manufacturing Company, Hunt and Commonwealth Streets, Sydney, N.S.W.

96.503. The letters "R.O.K." in a label design. Adhesives used in industry.—Potter Brown Adhesives Limited, 17 Palmerston Building, Queen Street, Auckland, New Zealand.

95.824. "Cotalace." Insulating or protective or decorative coatings and substances for yarns, threads, cords, tapes and wires.—Australian Plexon Proprietary Limited, Bradmill House, Misenenden and Parramatta Roads, Camperdown, N.S.W.

97.221. "U-Namel." Paint.—Coverwell Paint Co. Pty. Limited, 6 Emily Street, Roselle, N.S.W.

**MINERALS PTY. LTD.**

318 Botany Road, Alexandria, Sydney, N.S.W.  
Currie Street, Adelaide, S.A. and Perth, W.A.

Cable Address: "MINERALER," all States.

*In Association with*



**MINERALS (VIC.) PTY. LTD.**

Ingles Street West, Port Melbourne, Vic.  
And 27 Elizabeth Street, Hobart, Tas.

Industrial Earths and Wood Flour Millers.

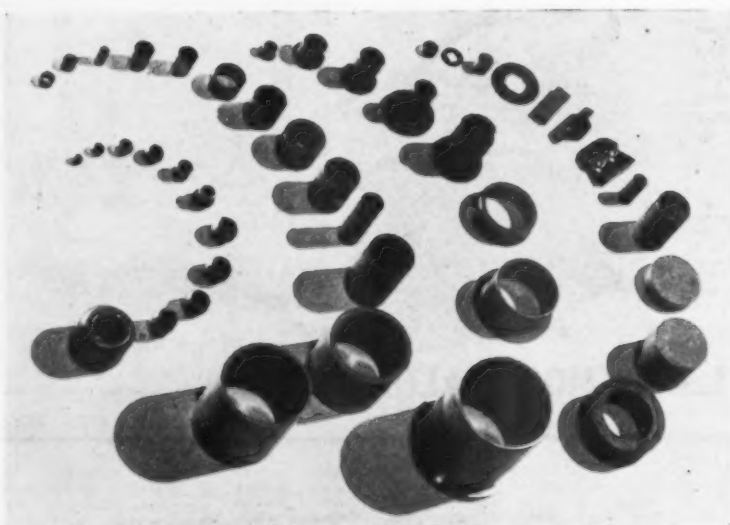
*Mineral Earths & Pigments*

**OXIDES**

*For all Industries*

# SINTALITE

## SELF LUBRICATING POROUS BRONZE BEARINGS



A wide variety of self-aligning, sleeve and flanged bearings, thrust washers and special shapes of Sintered porous bronze available.

SINTALITE Bearings contain 30% oil and are silent, wear-resisting and economical. Applications include electric motors, fans, washing machines, marine engines, pumps and automobile starter, generator, water pump and king pin bushes.

## SINTERED ALLOYS PTY. LTD.

225 TRAFALGAR STREET, PETERSHAM, N.S.W. TELEPHONE: LM 4466

96,829. The word "Safeguard" with a lock and chain. Leather wallets.—Taylor Hyton & Co. Asbestos House, 65-69 York Street, Sydney, N.S.W.

96,846. "Diozene." Photographic sensitized paper.—Plan Printing & Supplies Pty. Ltd., Lawson House, 49 Clarence Street, Sydney, N.S.W.

97,043. "Silver Line." Stationery.—Harold Edward Hyde, 184 Brunswick Road, East Brunswick, Victoria.

95,282. "Neaton." Furniture cream and plate powder.—Kemol Proprietary Limited, 47 Moreland Street, Footscray, Victoria.

96,659. "Plastikool." Hand-wheels, valves and valve fittings of plastic.—M. B. John Limited, Armstrong Street, South Ballarat, Victoria.

### TENDERS FOR PATENTS

"IMPROVEMENTS IN OR RELATING TO SHEET STEEL AND METHOD OF MAKING THE SAME", and "IMPROVEMENTS IN OR RELATING TO REELS FOR COILING MATERIALS."

Commonwealth Patents Nos. 117,207, and 101,569. The Patentees of these inventions desire that they be adopted and brought into commercial use and manufacture in Australia, and invite inquiries to this end from persons and firms interested.

Address inquiries to  
**SPRUSON & FERGUSON,**  
Patent Attorneys, of 16-18 O'Connell Street, Sydney.

"IMPROVEMENTS IN OR RELATING TO THE SEPARATION OF SOLID MATERIALS OF DIFFERENT SPECIFIC GRAVITIES."

Commonwealth Patent No. 117,465. The Patentees of this invention desire that it be adopted and brought into commercial use and manufacture in Australia, and invite inquiries to these ends from persons and firms interested.

Address inquiries to  
**SPRUSON & FERGUSON,**  
Patent Attorneys, of 16-18 O'Connell Street, Sydney.

HARRY ARMIN RUSH, the proprietor of Australian Patent No. 116,789, for "Improvements in Immersion Type Electric Water Heaters", invites enquiries from persons interested in manufacturing or using the patented invention in Australia under licence or other arrangement.

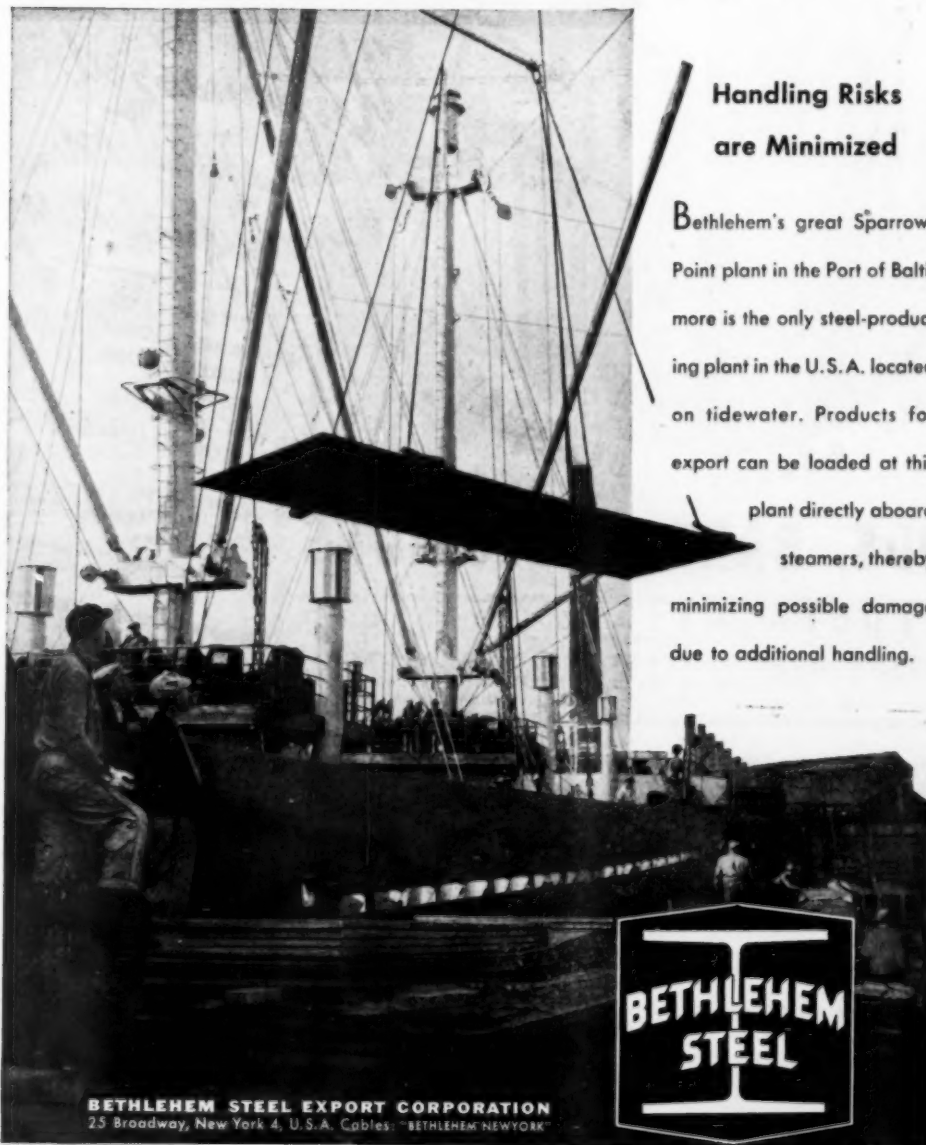
Address enquiries to  
**A. WALLACE SMITH, Patent Attorney,** 358 Collins Street, Melbourne.

"UPHOLSTERED CHAIRS."  
The Proprietors of Australian Patent 126,787, "Improvements in or relating to Upholstered Chairs and the like", desire that the invention be adopted and brought into commercial use and manufacture in Australia, and are prepared to satisfy all requirements of the public, and invite inquiries to such ends from persons and firms interested. Inquiries to  
**M. STARFIELD, Patent Attorney,** 17 Bond Street, Sydney, N.S.W. Phone BU 2265.



# BETHLEHEM Steel Products

come Direct from Mill to You . . .



## Handling Risks are Minimized

Bethlehem's great Sparrows Point plant in the Port of Baltimore is the only steel-producing plant in the U.S.A. located on tidewater. Products for export can be loaded at this plant directly aboard steamers, thereby minimizing possible damage due to additional handling.

**BETHLEHEM STEEL EXPORT CORPORATION**  
25 Broadway, New York 4, U.S.A. Cables: "BETHLEHEM NEWYORK"

*Representative: F. W. Green & Co. Pty. Ltd.*

**SYDNEY • MELBOURNE • ADELAIDE • BRISBANE • PERTH**





## EXTRUDED METALS

*Unsurpassed  
for repetition  
Manufacturing*

FREE CUTTING BRASS  
MANGANESE BRONZE  
HOT FORGING BRASS  
MUNTZ METAL  
NAVAL BRASS  
ARCHITECTURAL BRONZE  
COPPER  
NICKEL SILVER  
AND OTHER SPECIAL  
ALLOYS  
Also buyers of non-ferrous  
scrap metals.

## RODS, BARS & SECTIONS

EXTRUDED METALS PTY. LTD.

ESTABLISHED 1929

HAMSTEAD ROAD, MAIDSTONE, W.19, VICTORIA

POSTAL ADDRESS: BOX 61, FOOTSCRAY, W.11, VICTORIA

TELEGRAMS AND CABLES: "BRASSCO", FOOTSCRAY

TELEPHONE: MW 2311 (4 LINES)

CANAL BANKS

PHONE  
MU 1357-8

OFF RICKETTY STREET  
MASCOT, N.S.W.

# ACCEPTED TENDERS

### COMMONWEALTH

#### DEPARTMENT OF SUPPLY.

Steel (File No. 50/3662). B.H.P.  
Co. Ltd., £329/7/3.

Cordage, Sisal (File No. 50/  
3599). A. Forsyth & Co. Pty. Ltd.,  
£217/3/11.

Canvas Chairs (File No. 50/  
3961). E. & C. Rostron, £1,750.

Reflectors (File No. 50/2914).  
Silvrite Glass & Mirrors Pty.  
Ltd., £444/12/-.

Manchester (File No. 50/3951).  
W. E. Bird Pty. Ltd., £435/16/8.

Wooden Cots (File No. 50/3951).  
Bebarsfalds Ltd., £600.

Engine Room Telegraph Equip-  
ment (File No. 50/3488). Begg &  
Gregg Pty. Ltd., £673/16/-.

"Mack" Engine (Complete),  
(File No. 50/3714). Dominion  
Motors, £514.

Aeroplane Chocks (File No. 50/  
2496). H. E. Allen & Co., £725.

Fire Extinguishers, "Simplex"  
(File No. 49/2598). Wormald  
Bros. (East) Ltd., £1,000.

"Erie" Board Drop Hammer  
(File No. 50/3464). McPherson's  
Ltd., £2,275.

Motor Transport Lubricating  
Oils and Greases (File No. C4/  
154/26). Atlantic Union Oil Co.  
Ltd., C. C. Wakefield & Co. Ltd.,  
Caltex Oil (Aust.) Pty. Ltd., The  
Shell Co. of Aust. Ltd., Australian  
Motorists' Petrol Co. Ltd., Alba  
Petroleum Co. Ltd., H. C. Sleigh  
Ltd., Vacuum Oil Co. Pty. Ltd.,  
Neptune Oil Co. Pty. Ltd., Inde-  
pendent Oil Industries, £200,000.

Buckles, Trouser, Oxidised (File  
No. C4/253/79). General Plastics  
Ltd., £55/4/2.

Filters, Streamline (File No. C4/  
303/85). Gibson, Battle (Melb.)  
Pty. Ltd., £910.

Cast Aluminium Inserts (File  
No. C4/366/119). Specialised En-  
gineering Co. Pty. Ltd., £2,325.

Floor Scrubbing and Suction  
Drying Machine (File No. C4/  
307/237). Rusden, Birrell & Co.  
Pty. Ltd., £327/4/-.

Gowns, Drab, W.A.A.F. (File  
No. C4/251/93). Myer Emporium  
Ltd., £2,250.

Cotton Webbing (File No. C-  
4/280/8). The New York Junk  
Co., £1,381/5/-; Mercur Trading  
Co., £1,408/10/5; and Textile  
Tapes Pty. Ltd., £351/11/3.

Waste Paper Baskets (File No.  
C4/150/47). Gold Medal Wicker  
Works, £188/18/2.

Blackboards and Easels (File  
No. C4/159/60). F. C. Washing,  
£2,877/10/-.

Packing Cases (File No. C4/177/  
58). Fred. Campbell & Son,  
£837/12/6.

Canned Fruit Juices (File No.  
C4/106/489). Mildura Co-op.  
Fruit Co. Ltd., £2,496/15/7.

Knives, Table (File No. C4/175/  
75). Briscoe & Co. Ltd., £350/4/5.

Kettles Fish, Tin (File No. C4/  
175/173). A. Jones & Co., £195.

Cases, Wood Packing (File No.  
C4/177/57). H. Parsons Joinery  
Works Pty. Ltd., £231/5/-.

Formallon Transfers (File No.  
C4/150/42). Selex Decal Pty. Ltd.,  
£929/5/11.

Handles, Broom, Sweeping (File  
No. C4/157/46). Australian Broom  
Co. Pty. Ltd., £475/14/9.

Acid, Boric, Powder (File No.  
C4/161/61). Robert Bryce & Co.  
Pty. Ltd., £56/2/4.

Aluminium Paste (File No. C-  
4/161/61). Alexander, Fergusson  
Pty. Ltd., £68/12/-.

Slices, Fish Steel, with Offset  
Blade and Cleated Wooden Handle  
(File No. C4/175/182). Briscoe &  
Co. Ltd., £79/10/10.

Stationery (File No. C4/176/87).  
W. & G. Dean Pty. Ltd., £162/1/6.

Paper, Tracing and Cartridge  
(File No. C4/176/87). Harding &  
Halden Pty. Ltd., £152/17/3.

## KEELEY WILSON & CO.

### STEEL EXPORTERS

Mild Steel Angles, Beams, Bars, Rails, Flats, Rounds, etc.; Galvanized Wire, Barbed Wire and other wires; Pipes, Tubes, etc.; High-speed Steel, Alloyed Special Steels, etc.

FROM BRITAIN AND THE CONTINENT  
COMPETITIVE PRICES GOOD DELIVERIES  
DETAILED ENQUIRIES INVITED

62 OXFORD ST., LONDON, W.1.  
ENGLAND

CABLES: 'KEELEY,' LONDON

## IMPORTED STEEL

SHEETS (Deep Drawing, Blk., Gal.)  
M.S. AND BOILER PLATE  
JOISTS, CHANNELS, ANGLES  
REINFORCING RODS  
PIPING (Blk. and Gal.)  
BRIGHT STEEL SHAFTING  
WIRE & WIRE NETTING  
ASBESTOS CEMENT SHEETS & PIPING

### REFINED PIG IRON

Standard sizes and gauges can be offered for early shipment  
from overseas

PRICES REASONABLE ENQUIRIES INVITED

**Hurley & Dewhurst Pty. Limited**

WINGELLO HOUSE, ANGEL PLACE, SYDNEY, N.S.W.

Telegram: "DEWLEY," Sydney

Phone: BL 2563

Rods, Welding (File No. C4/354/20). Commonwealth Industrial Gases (Victoria) Ltd., £112/1/6; Glover & Goode Pty. Ltd., £99/3/4; and Oerlikon Manufacturing Co. Ltd., £230/8/4.

Blackboards (File No. C4/150/51). A. C. Mence Pty. Ltd., £126.

Solder, Silver (File No. C4/371/350). Glover & Goode Pty. Ltd., £170.

Safes (File No. C4/360/76). J. L. Kelly & Son, £488.

Buckets, Galvanized Iron (File No. C4/366/142). J. W. Tomlin, £216/2/5.

Carpet Squares (File No. C4/267/43). W. Braash Macarthur Ltd., £1,935/17/6.

Bow Top Assembly (File No. C4/302/112). Stokoe Motors Pty. Ltd., £343/4/-.

Electric Motor (File No. C4/307/279). Warburton, Franki (Melb.) Ltd., £425.

20 9 7 6 45 5a 40 40a 35 36 65

GM GM GM GM SIL SIL RG RG RG RG SIL SIL SIL SIL

ACTUAL SIZE

**Austral**  
CHAIN CO.

Manufacturers of Chain in all Metals

- PLATINUM
- WHITE GOLD
- YELLOW GOLD
- SILVER
- ROLLED GOLD
- GILDING METAL CHAIN

in GILT, NICKEL, or SILVER finish.  
WIRE DRAWING TO ANY SIZE.

MELBOURNE ADDRESS:  
88 KAY STREET, CARLTON  
VICTORIA  
Manager:  
Miss M. E. WITTENBERG  
Phone: FJ 9412

16 21

R.G. BRASS

STG. SILVER & 9 CARAT CHAIN  
AVAILABLE FOR IMMEDIATE DELIVERY

Electric Floor Polishing Machines (File No. C4/307/240). James Balfour & Co. Pty. Ltd., £296/5/6.

Plugs (File No. C4/313/230). Wing Gauge & Instrument Co., £86/15/3.

Milling Jaws (File No. C4/313/255). A. J. Lovell, £224/2/4.

Time Fuse Covers (File No. C4/350/56). Crusader Plate Co. Pty. Ltd., £965/8/4.

Trane Convector Heaters—Wall Mounting Type (File No. C4/350/55). W. G. Crosale & Co. Pty. Ltd., £612/10/-.

Detonator Adapters (File No. C4/350/64). Parow & Whight, £2,332/11/-.

Mild Steel Rings (File No. C4/350/66). H. Arendsen & Sons Pty. Ltd., £52/10/-.

Bolts, Nuts, Screws and Washers (File No. C4/357/10). Duly and Hansford Ltd., £679/1/9.

Axes, Tomahawks, Wedges and Hammers (File No. 50/4096). Hytest Axe & Tool Pty. Ltd., £543/18/1.

Safes (File No. C4/360/76). M. G. Dyke & Sons Pty. Ltd., £164/10/-.

## AUTOMATIC BAR WORK

STEEL OR BRASS

Capacity Available 1-2 1/2 inches

**PURVIS-GLOVER ENG. Pty. Ltd.**

41 Moreland St. } FOOTSCRAY

54 Hopkins St. } VICTORIA

MW 2284

## TIMBER!

Supplies of

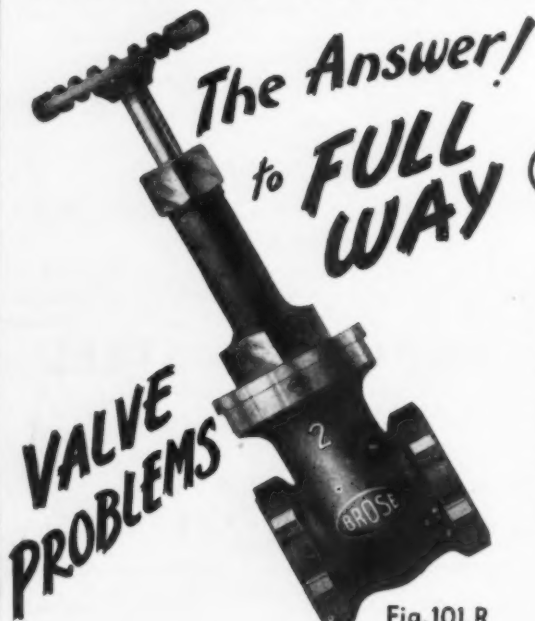
- CASE TIMBERS
- HARDWOOD SCANTLINGS
- PINE SHELVING AND FLOORING
- FENCING MATERIAL
- PALLETS AND PLATFORMS

Obtainable from

**SMITH BROS. PTY. LTD.**

767-775 BOTANY ROAD, WATERLOO, SYDNEY  
Telephone: MU 2241 (5 lines)

# Announcement Of Particular Interest To PETROL AND OIL, GAS AND CHEMICAL COMPANIES



Brose Valves Limited, realising the need for a full-way-screwed gate valve with rising spindle, are able to advise that they can now supply a standard range in sizes 1in. to 4in.

The design of these valves is a new departure from the conventional type, has been subjected to the most rigid tests under extreme conditions and is particularly recommended for use in the control of PETROL, KEROSENE, OILS, GAS, and, in fact, all chemicals and liquids not injurious to copper alloys.

These valves are available for early delivery in two specifications:

- (i) 101R.—Suitable for working pressures: Hydraulic up to 150 lbs. per sq. inch.
- (ii) 101RX.—Suitable for working pressures: Hydraulic up to 300 lbs. per sq. inch.

Fig. 101.R

## FEATURES INCLUDE:

- ★ Instant and complete shut-off with easy control.
- ★ Gate discs which are simply replaced or renewed and which can be supplied in nickel alloy, stainless steel, monel metal, etc., if considered necessary.
- ★ New design hexagons with sturdy flat-faced, V-shaped lugs which permit firm fit and grip of open-end pipe wrench without disfiguring casting.
- ★ Interchangeable replacement spares available ex stock.
- ★ Are of strong and rugged construction. Designed and built to outlast normal life of the ordinary standard type valve in the most severe industrial applications.

For Full Particulars and Literature, write

# BROSE VALVES LIMITED

LIDCOMBE, N.S.W.

OR THEIR AGENTS IN ALL STATES

VICTORIA:  
WESTON R. FOX PTY. LTD.  
364 Lonsdale Street  
Melbourne

SOUTH & WEST AUSTRALIA:  
MARSHALL AGENCIES  
146 Gawler Place  
Adelaide

QUEENSLAND:  
GRADWELL BROS.  
99-101 Edward Street  
Brisbane

NEW ZEALAND:  
FOX & GUNN LTD.  
54 Customs Street East  
Auckland

MERCHANTS IN ALL STATES ARE STOCKISTS OF BROSE VALVES

Plugs (File No. C4/313/230). Sutton Tool & Gauge Manufacturing Co. Pty. Ltd. £668/13/-.

Strain Insulators (File No. C4/307/222). Nilcom. Porcelain (Aust.) Pty. Ltd. £177/7/-.

Synchronous Motor (File No. C4/307/230). Coates & Co. Pty. Ltd. £273.

Baffle Plates (File No. C4/350/63). Amor Pty. Ltd. £343/12/3.

File Cases, 18 Gauge, Aluminium Alloy (File No. C4/360/60). Gallo-way's Panel Works. £136.

Spring Loaded Safety Valve (File No. C4/360/71). John Danks & Son Pty. Ltd. £148/15/-.

Pastry Cutters, Tinplate (File No. C4/366/124). Small & Shat-tell Pty. Ltd. £60.

Toroidal Coil Winding Machine (File No. 50/4031). G. W. Prit-chard. £257/10/-.

Wheel Barrows (File No. 50/4096). Federal Machinery Co. Ltd. £288/19/6.

Paper, Brown, Waxed, Oiled (File No. 50/3832). McFarlane & Burns Pty. Ltd. £450/9/-.

Trichloroethylene: Degreasing Plant (File No. 50/3377). Imper-ial Chemical Inds. of Aust. & New Zealand Ltd. £301/9/8.

Galv. Pipe in random lengths (File No. 50/3839). Stewarts & Lloyds (Aust.) Pty. Ltd. £319/3/8.

Strapping (File No. 50/3526). Strapping Machines Pty. Ltd. £414.

Table Margarine (File No. 50/3468). Vegetable Oils Pty. Ltd. £534.

## REPATRIATION COMMISSION.

Occupational Therapy Stores (Wool, etc.), at Repat. Gen. Hos-pital, Springbank. Patons & Bald-wins Ltd. £495/1/2.

Occupational Therapy Stores (Skins, Hides, etc.), at Repat. Gen. Hospital, Springbank. L. W. Hutton & Co. £246/10/2.

Andres Tissues, Repat. Hospi-tal, Hobart. Muir & Neil Pty. Ltd. £318/8/2.

Covers, Couch and Lounge, Repat. Hospital, Hobart. £99.

Covers, Chair, Repat. Hospital, Hobart. Coogan & Co. £37/4/-.

Pillows, Kapok, Repat. Hospital, Hobart. Coogan & Co. £145.

Tobacco and Cigarettes, Repat. Hospital Canteen, Concord. £2,281/8/6; Prince of Wales Repat. Hospital Canteen, Randwick. £397/3/10; Repat. Hospital Can-teen, Concord; Gen. Hospital Can-teen, Concord. Dalgely & Co. Ltd. £289/19/2.

Canteen Supplies, Repat. Hospi-tal Canteen, Concord. Brown & Dureau Ltd. £201/12/8.

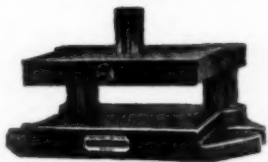
Infra-red Ray Lamps, Repat. Office, Grace Building, Sydney. Phillips Elec. Ind. of Aust. Pty. Ltd. £324.

Short Wave Therapy Machine, Repat. Out-patient Clinic, Grace Building, Sydney. Phillips Elec. Ind. of Aust. Pty. Ltd. £285.

Rotating Anode Tube, Repat. Hospital, Concord. Phillips Elec. Ind. of Aust. Pty. Ltd. £415.

Suction Blanket and Burlap, Repat. Hospital, Concord. James Hardie Trading Co. Pty. Ltd. £311/17/-.

—JOHN HEINE—



## PRECISION DIE SETS FOR PRESS TOOLS Immediate Delivery

Standardized Units  
ensure speedy and  
accurate delivery.

Write for illustrated Bulletin 492

**JOHN HEINE & SON PTY. LTD.**

ALLEN STREET, LEICHHARDT, SYDNEY, N.S.W.

Melbourne, Adelaide and Perth: McPherson's Ltd.

Brisbane: Engineering Supply Co. of Aust. Ltd.

New Zealand: John Chambers & Son Ltd.

The Most Extensive Manufacturers  
in the British Empire of  
**RUBBER STAMPS,  
INKS, STENCILS,  
MARKING DEVICES,  
ACME STAMP PADS**

OFFICE AND STATIONERY SUPPLIES



We also Manufacture and  
Supply a Complete Line of

**LIMEWASHING AND  
SPRAYING MACHINES  
FOR ALL PURPOSES**

Let us know your requirements  
and we will quote by return.

Limewashing Machine. **WRITE FOR OUR GENERAL CATALOGUE**  
**EXCELSIOR SUPPLY CO. PTY. LTD.**

HEAD OFFICE:

278 Post Office Place,  
MELBOURNE, VIC.

180 BROADWAY,  
SYDNEY, N.S.W.

80 Victoria Street,  
WELLINGTON, N.Z.



# ALEXANDER UNIVERSAL DIE-SINKING MACHINE



*Specially designed to meet the needs of a modern  
toolroom where mould and tool work has to be  
produced to fine limits*

Manufactured by

**GEO. H. ALEXANDER MACHINERY LTD.**  
BIRMINGHAM, ENGLAND

Factory Representatives for Australia and New Zealand:

## LEO ROGALY AND LEWIS

PTY. LIMITED

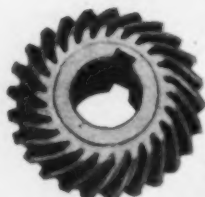
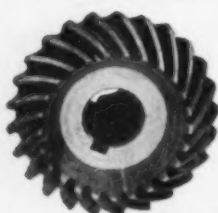
119-123 YORK ST., SYDNEY

Telephone: BX 4855

Telegrams: "ALEWIS," Sydney



## HAVING TROUBLE WITH BEVEL GEARS? THEN CHANGE TO SPIRAL BEVELS



Only *SPIRALS* have these advantages:

- As many as 5 teeth always in mesh, giving smooth, quiet action, and also
- reduces working load on tooth.
- Localised tooth bearing, allowing greater tolerance in assembly.
- Curved teeth keep lubricants between mating surfaces.
- The 20° long-addendum tooth form prevents interference when the pinion has as few as 6 teeth.

Capacity for SPUR and CLUSTER GEARS to 8in. diam. done by the FELLOWS METHOD.

REMEMBER! These gears actually COST NO MORE than straight bevels.

RANGE:  $\frac{1}{8}$  in. to 3  $\frac{1}{2}$  in. diam. 12 D.P. to 50 D.P. 12-teeth pinions to 100-teeth crown wheels.

**G. L. SHERATON**

MANUFACTURING AND GENERAL ENGINEER.

445 HEIDELBERG ROAD,  
FAIRFIELD, N.20, VICTORIA

TELEPHONE: JW 4752.



## FOR DECORATING & BRANDING



THE FAMOUS SELEX DECALS ARE UNEQUALLED FOR BRILLIANT COLOUR AND DURABILITY ON WOOD, METAL, PLASTICS, RUBBER, LEATHER AND GLASS

**SELEX DECAL PTY. LTD.**

OFFICES IN ALL AUSTRALIAN CAPITAL CITIES

Technical Associates:- Canada Decalcomania Co., Toronto and The Meyercoed Co., Chicago



## "BLUE BOOK" OF INDUSTRY

Copies of New Issue  
NOW READY

- (1) List of Manufacturers.
- (2) Articles made in Australia and Names of Makers.
- (3) Trade Marks and Brands.

1,184 PAGES

Price: £2/12/6 Copy

ORDER NOW!

(Continued from page 72.)

X-ray Films and Requisites, Lady Davidson Home, Repat. Out-Patient Clinic, Grace Building, Sydney, £1,503/5/9; Repat. Gen. Hospital, Concord, £16,379/14/-; Grace Building, £11,228/4/4. Kodak (A'asia.) Pty. Ltd.

Streptomycin, Repat. Hospital, Concord. Gollin & Co. Pty. Ltd., £724/9/7.

Hospital Dressings, Repat. Hospital, Concord, £587/10/-; Out-Patient Clinic, Grace Building, Sydney, £296/12/6. Greenhalghs Pty. Ltd.

Drugs and Druggist Sundries, Repat. Hospital, Concord Elliotts & Aust Drug Pty. Ltd., £354/7/6.

Tobacco, Cigarettes, etc., Repat. Hospital Canteen, Greenlapses, W. D. & H. O. Wills (Aust.), £1,013/15/7.

### GOVERNMENT RAILWAYS DEPARTMENT.

Mobile Circular Saw (T.7715). Power Machinery Pty. Ltd., £289 each.

Public Address Equipment (7717), Hexter & Eddy, £41/12/-; Amplifiers and Loudspeakers (7717), Hexter & Eddy, £180/13/3.

### DEPARTMENT OF WORKS AND HOUSING.

Cold Room Equipment at C.S.I.R.O., Fishermen's Bend, Frigrite Pty. Ltd., £1,824.

Refrigerators (7), 100 cub. ft., at Northam Holding Centre. A. J. Baker & Sons, £2,821.

Tubular Steel Chairs (380), at R.O.D., Midland Junction, Stewarts & Lloyds (Aust.) Pty. Ltd., £1,594/8/4.

Supply and erection of Laboratory Fittings, at C.S.I.R.O., Biochemistry Laboratory, Fishermen's Bend. P. F. Dunby, £16,721/10/9.

Supply and installation of Sawdust Exhaust System, at Postmaster-General's Carpenters' Workshop, Adelaide. T. O'Connor & Sons Ltd., £1,289.

### POSTMASTER-GENERAL'S DEPARTMENT.

Telephones and Components (Sch. No. C.5671). Amalgamated Wireless (A'asia.) Ltd., £27,375.

Relays, 3,000 type (Sch. No. C.5785). Standard Telephones & Cables Pty. Ltd., £3,296/5/-.

HERE'S HEALTH TO INDUSTRIAL RELATIONS...



**KELVINATOR**  
**Water Coolers**  
PROVIDE THE SIMPLE ANSWER TO  
MANY PRODUCTION PROBLEMS!

★ Behind frayed tempers and friction . . . behind slackened effort, absenteeism and industrial mishaps . . . is *fatigue*. And the best remedy for industrial fatigue is adequate provision of cool, refreshing water, hygienically dispensed. Fulfil these conditions by installing dependable Kelvinator Water Coolers in your industrial premises.

BENEFIT BY THE WORLD'S GREATEST EXPERIENCE IN REFRIGERATION

# KELVINATOR

• DISTRIBUTORS OF KELVINATOR EQUIPPED COMMERCIAL REFRIGERATION

• N.S.W. DISTRIBUTORS—D.G.M. REFRIGERATION LTD., a subsidiary of DANGAR, GEDYE & MALLOCH PTY. LTD., 10-14 Young Street, Sydney; 549-559 Harris Street, Ultimo. RAVA (SYDNEY) PTY. LTD., 259 Broadway, Sydney. • VIC. DISTRIBUTORS—A. H. GIBSON (ELECTRICAL) CO. PTY. LTD., 25 McKillop Street. KELVINATOR AUSTRALIA LIMITED, Williamstown Road, Port Melbourne. • QUEENSLAND DISTRIBUTORS—E. L. LEWIS & SONS PTY. LTD., 106 Edward Street, Brisbane. CHANDLERS PTY. LTD., Cor. Albert and Charlotte Streets, Brisbane. CAIRNS: E. MARKHAM, 31c Shields Street. • S.A. DISTRIBUTORS—OLIVER J. NILSEN & CO. LTD., 64 Gawler Place. BROKEN HILL: BARRIER ELECTRICAL APPLIANCES LTD., Argent Street, Broken Hill. • W.A. DISTRIBUTORS—NICHOLSONS LIMITED, Barrack Street, Perth. • T.A.S. DISTRIBUTORS—MAX GEEVES PTY. LTD., Davey Street, Hobart; Brisbane Street, Launceston.

KELVINATOR AUSTRALIA LIMITED • ADELAIDE • MELBOURNE • SYDNEY

Electrical Indicating Meters (Sch. No. C.5793). H. Rowe and Co. Pty. Ltd., £825/8/5.

Coach Screws (Sch. No. C.6221). Gollin and Co. Pty. Ltd., £4,140/1/8.

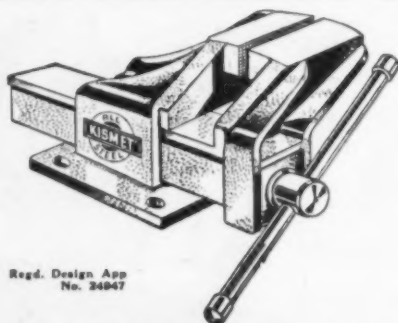
Carrier Telephone Equipment (Sch. No. C.3978). Standard Tele-

phones & Cables Pty. Ltd., £18,840/6/-.

2,900 Type Switch Maintenance Parts (Sch. No. C.6253). British General Electric Co. Pty. Ltd., £51,513/5/4; British Automatic Telephone & Electric Pty. Ltd., £6,634/6/9.

Components, for Generators (Sch. C.6336). Permanent Magnets Pty. Ltd., £5,100; Australian General Carbon Pty. Ltd., £900; Alpha Engineering Co. Pty. Ltd., £1,950; Malleable Castings Pty. Ltd., £1,125.

(Turn to page 76.)



Regd. Design App  
No. 34847

## The "KISMET" FULLY OFFSET VICE

Specially Manufactured for Ultra-Convenience . . .

The latest addition to the Kismet range is this ultra-convenient vice with fully offset jaws. Only KISMET all-steel vices will stand all stresses and strains of rough and rugged work. They do not snap or break as cast vices. Spring loaded spindle to eliminate backlash, specially designed nickel bronze nut to take side and end thrust. (Reg. Design No. 24,100.) Sizes: 4in., 5in., and 6in. jaws.

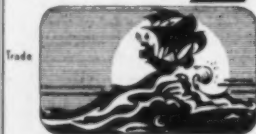
### AVAILABLE FROM WHOLESALE HOUSES

Factory Representatives: WHITE and PETRIE, 65 Elizabeth St., Brisbane; White and Petrie, Sydney; Weston, R. Fox & Co. Pty., Ltd., Melbourne; Arthur H. Hall, Adelaide; A. Parkinson & Co., Perth; Howard Vaughan Pty., Ltd., Wellington. Export Enquiries: White and Petrie.

### MANUFACTURED BY

**KISMET ENGINEERING WORKS**  
BRISBANE

# Crest



THIS IS YOUR GUARANTEE OF  
UNSURPASSED QUALITY AND  
UNIFORMITY.

## Zinc Oxide

Manufactured in Australia by  
**Crest Chemical Company Pty. Ltd.**  
PERRY ST., MATRAVILLE, N.S.W.  
Telephone FJ2493.

Accumulator Cells (Sch. No. C-6169). Tudor Accumulator Co. Ltd., £14,012/3/4; Alton Battery Co. Ltd., £10,473/12/-; Pritchett and Gold and E.P.S. Co. Ltd., £10,386/2/6; Hart Accumulator Co. Ltd., £10,386/2/6; Tungstone Products Ltd., £61,988/12/2; Tudor Accumulator Co. Ltd., £10,728/6/-.

Cable Drum Trailers (Sch. No. C-5962). Dawn Manufacturing Co. Pty. Ltd., £723/16/-.

Pole Creosoting Plant (Sch. No. 6298). Hardie Rubber Co. Ltd., £330/5/11.

Portable Power Kits (Sch. Q-999). Butler Bros. (Aust.) Pty. Ltd., £245/7/8.

### VICTORIA

#### PUBLIC WORKS DEPARTMENT.

Kitchen Equipment, for Greenvale Sanatorium. Rickards Bros. Pty. Ltd., £58.

Chain Wire Guard, for Mental Hospital, Ballarat. Davis Bros., £48.

Heating Stoves, for Wodonga School. Ross's Pty. Ltd., £86/12/6.

Telephone System, for Mental Hospital, Royal Park. British Automatic Telephone & Electric Pty. Ltd., £34/10/-.

Telephone System, for Sunbury Mental Hospital. British Automatic Telephone & Electric Pty. Ltd., £55.

Refrigerators, for Girls' Hostel. Rickards Bros. Pty. Ltd., £306.

Central Heating, for Nurses' Home, Mont Park. Mental Hospital. J. Wilson, £3,386.

Thermolator, for Emily McPherson College of Domestic Economy. Metropolitan Gas Co., £27.

Clock System, for Technical School at Caulfield. Ingrams Bright Pty. Ltd., £343/17/6.

Equipment, for Emily McPherson College of Domestic Economy. Eltham G. Turner, £49/10/-.

Heating Stoves. F. West, £81/12/4.

Window Fittings, for Footscray Technical School. Cyclone Co. of A. Ltd., £238/17/6.

Heating System, for Collingwood Technical School. A. E. Atherton & Sons Pty. Ltd., £15,191/10/-.

Plumbing Equipment, for Footscray Technical School. L. R. Brown & Son, £475.

Exhaust Fan, for Technical School, Wangaratta. A. E. Webster, £28/17/8.

#### DEPARTMENT OF EDUCATION.

Screwcutting Lathes, Hercules Model "C", 9 in. vee bed bench-type, £205. McPherson's Ltd.

#### GOVERNMENT RAILWAYS DEPARTMENT.

Universal Milling Machine. J. J. Masur & Co. Pty. Ltd. Rates.

Petrol Engined Tipper Trucks. Preston Motors Pty. Ltd. Rates.

Non-inflammable Brattice Cloth. Gollin & Co. Pty. Ltd. Rates.

Purchase of Second-hand Transformers and Equipment (Tender 1388). Belfast Machinery & Metal Co., £315.

The Finest House in  
Australia for  
Engravings of Every  
Description

*The Randle*  
**Photo Engraving Co.**  
PTY. LTD.

Photo. Engravers, Stereotypers,  
and Designers

RANDLE HOUSE,  
73 FLINDERS STREET,  
DARLINGHURST, N.S.W.

Phones: FA 3158-9

L. T. KENNETT  
Improved Patent, 14509

## LADDERS

for  
BUILDERS,  
PAINTERS,  
and  
HOME  
USE,  
also  
STEPS,  
TRESTLES,  
GARDEN  
SEATS,  
HAND  
TRUCKS.



Illustrated  
Booklet  
Free on  
Request.

L. T. KENNETT LADDERS  
PTY. LTD.

26, 27, 28 CITY ROAD  
DARLINGTON, SYDNEY  
Estd. 29 Years. Tel.: MX 3274.

## Manufacturing Engineers

Automatic and Capstan  
Turning, Milling, Drilling,  
Cutter Grinding

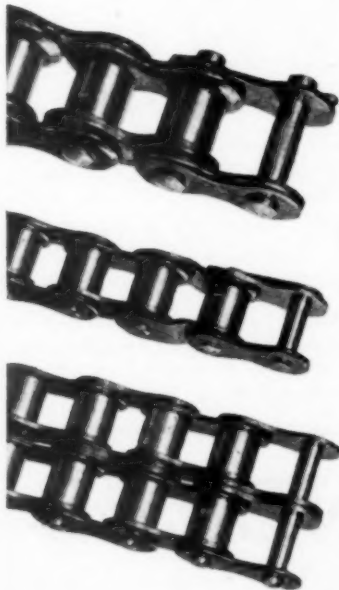
GENERAL MACHINING  
AND ASSEMBLY

**W. B. STEEN**  
PTY. LTD.

129 Palmer St., Richmond, Vic.

'Phone: JA 6700

For Precision and Service.



## INDUSTRIAL ROLLER CHAIN

MADE IN GERMANY

This industrial roller chain is produced to precision engineering standards in all required types and sizes. It is of robust construction and particularly recommended for efficient operation where heavy duty conditions are encountered and maximum strength is essential.

AVAILABLE FOR EARLY DELIVERY — INDEXT ONLY

**SIMPLEX  
DUPLEX  
TRIPLEX**

Motor Cycle Chain Also Available

**ROBERT A. CONAGHAN & COMPANY**

239 Clarence Street, Sydney, N.S.W.

Telephone: BX 5825

**COATED ABRASIVES**

*by*  
**OAKLEY**

**EMERY • WELLINGTONITE**  
(ALUMINOUS OXIDE)

**AND  
CARBORUNDUM CLOTH**

In Sheets, Rolls, Belts, Discs & Shapes

**FOR ALL  
METAL & ENGINEERING  
TRADES**



*Representatives :*

**H. S. INGAMILLS & CO.**  
408-410 Collins Street  
**MELBOURNE**  
and  
25 Clarence Street  
**SYDNEY**

## MECHANICAL SORTING EQUIPMENT

Wholly Made in Australia in Sizes to Suit Either the Smallest or the Largest Office.

**FAST, ACCURATE AND SAFE!**

Is Simple, Inexpensive, Eliminates Drudgery and Releases Time for Important Work

Fastest office system ever devised for arranging documents, letters, records, etc., in any desired order. More than 2,700 Systems operating in Australia with complete success.

*The Sorter-Graf Co.*  
G. BLAKE

Manufacturers and Suppliers of Sorter-Graf Systems and Equipment. Demonstrations Free.

WARWICK BUILDING, 15 HAMILTON STREET, SYDNEY  
AGENTS IN ALL STATES. Tel.: BW 7332.

## APEMCO

### PORCELAIN ENAMELS

The APEMCO Range includes a Type of Porcelain Enamel for Each and Every Industrial Purpose

ALSO

Acid-resisting Enamels for Bath Tubs (Dry Process). Liquid Cast Iron Enamel for Stoves, Leadless or Lead Containing for use with or without undercoat, and Sheet Iron Enamels for Refrigerators and Flat Work. Acid-resisting or Ordinary.

### Apemco Porcelain Enamel Specialists

Pakington St., St. Kilda, Vic. Point Nepean Rd., Nth. Brighton, Vic.  
Telephones: LA 1006, XB 2666, U 7830.

Cable & Telegraphic Address: "APEMCO," Melbourne.

# CURRENT TENDERS

## NEW TENDERS

The following tenders have been called since our last issue. Current tenders which have been published in previous issues follow this section.

### COMMONWEALTH

#### POSTMASTER-GENERAL'S DEPARTMENT

B.P.O. Standard Unisector Maintenance Parts (Sch. C.6426). Jan. 16.

Bolts, U. Hook and Screws (Sch. C.6450). Nov. 9.

Bolts, Hexagon or Square Head or Cuphead (Sch. C.6449). Nov. 16.

Broadcasting Transmitters, Radio Telephone (Sch. C.6435). Dec. 14.

Enamelled Signs (Sch. C.6459). Nov. 21.

Nuts and Washers (Sch. C.6451). Nov. 11.  
Soldier (Sch. C.6458). Nov. 21.  
Teleprinter Table and Silence Covers (Sch. C.6439). Nov. 28.

#### DEPARTMENT OF EXTERNAL TERRITORIES

Sporting Goods (Sch. 238). Oct. 30.  
Telephone Materials (Sch. 235). Oct. 30.

#### DEPARTMENT OF WORKS AND HOUSING

Air Conditioning System, for Fivedock. Nov. 14.  
Dual Pressure Controls, Thermometers, Flare Nuts and Saddles. Nov. 2.

Four and Six Core P.L.C.S.W. Cable. Nov. 2.

Garbage Incinerator, Semi-portable type, for Mascot Airport (Quot. 180). Nov. 2.

High Tension Underground Cable and Joint Boxes, for Canberra. Nov. 28.

Line Material, including Insulators, Pins, Shackle Straps, etc. Nov. 2.

Low Tension Underground Cable and Joint Boxes, for Canberra. Nov. 28.

Prefabricated Knock Down Portable Type Cool Rooms. Nov. 2.

Pumping Plant, for Bogan Gate, N.S.W. Nov. 14.  
Steam Valves. Nov. 2.

#### GOVERNMENT RAILWAYS DEPARTMENT

Tyres, for Rolling Stock. Nov. 21.

#### STORES, SUPPLY AND TENDER BOARD

Disinfectants (Sch. C.T.B. 915). Nov. 23.

### NEW SOUTH WALES

#### DEPARTMENT OF MAIN ROADS

Bar Mat Reinforcement. Oct. 31.

Concrete Pipes. Oct. 31.  
Insulating Material. Oct. 31.  
Power Rippers. Oct. 31.

#### DEPARTMENT OF PUBLIC WORKS

Air-Conditioning Plant, for Dubbo Base Hospital. Oct. 30.

Crane Scale, 5-ton cap. Nov. 3.  
Dishwashing Unit. Nov. 8.

Electric Drill, 5/16 H.D. Nov. 3.  
Gas Fire, 7 Radiant. Nov. 3.

Electric Lighting Plant, for Quirindi Aboriginal Station. Nov. 20.

Garage Type, Petrol Driven Compressor. Nov. 3.

Gas Console Heaters. Nov. 3.

Lathe, Drill, Grinder and oxy Welding Set. Nov. 3.

Lightning Arresters. Nov. 29.

Out-door Type Potential Transformers, P.M.S.P. Nov. 3.

(Turn to page 79.)

## NICHROME RESISTANCE WIRE THE WORLD'S BEST

Made in England

SOLE AUSTRALIAN AGENTS:

**WARMAN & DOUGLAS**

241 FLINDERS LANE, MELBOURNE.

Phone: JM 1542.

## "CHALLENGE" OILERS



BRASS NICKEL PLATED IN THE FOLLOWING SIZES:

$\frac{3}{8}$  in.,  $\frac{1}{2}$  in.,  $\frac{3}{4}$  in., 1 in. and  $\frac{1}{2}$  in.

**AUSTRAL METAL PRESSING PTY. LTD.**

970-972 LIVERPOOL ROAD, BANKSTOWN EAST, N.S.W.

Telephones: UY 1075, UY 1264, UY 1265.



## WIREWORK

OUR ORGANISATION HAS CAPACITY AVAILABLE  
FOR ALL CLASSES OF WIRE WORK

- All types of Steel, Brass, and Monel Metal Springs.
- Repetition Lathe Work. ● Silver Soldering. ● Specialists in Brass Rod and Brass Wire Work.

Estimates Given. Prompt Deliveries.

CONSULT US RE YOUR WIRE PROBLEMS.

**E. S. BRYANS,** Phone: LU4559

27 TRACEY STREET, HURSTVILLE, N.S.W.

### NEW TENDERS - Contd.

Passenger Lift, electrically-operated, for Royal Hospital for Women, Paddington. Nov. 13.

Potato Peeler and Food Mixer. Nov. 8.

Steam-heated Sterilising Equipment. Nov. 8.

Water Pressure Gauges. Nov. 8.

Pneumatic Clay Spader. Nov. 3.

Tubular Handrail. Nov. 3.

X-Ray Cassette. Nov. 8.

X-Ray Unit and Accessories, for Mudgee District Hospital. Nov. 13.

#### DEPARTMENT OF ROAD TRANSPORT AND TRAMWAYS.

Underground Cable, Multicore Steel Wired Armoured Jute, served and impregnated, for Electric Traffic Signals (Spec. S-573). Nov. 13.

#### DEPARTMENT OF SUPPLY.

Automatic Telegraph Equipment. Nov. 30.

Bedding and Accessories. Oct. 31.

Bench Stripping Stands for 20mm. Guns. Nov. 2.

Dishwashing Machine. Nov. 7.

Drugs and Chemicals. Oct. 31.

Electric Motors, Purchase of. Nov. 7.

## SPRAY

## PAINTING

All types of finishing —  
Lacquer, Enamel, Paint, Flock,  
Wrinkle, Spatter — done for  
the Trade.

**Specialists in  
Stove Enamelling**

Ring LA 1437

**J. & F. BROCK BROS.**  
Pty. Ltd.

5 INKERMANN STREET  
ST. KILDA, VIC.

Folding Operating Tables. Oct. 31.

Power Transformers. Oct. 31.

**MARITIME SERVICES BOARD.**  
Steel Roller Shutters (12), for new shed at Darling Harbour (Con. 50/48). Dec. 4.

#### FORESTRY COMMISSION.

Bolts, h.s. Oct. 31.

Electric Petrol Bowser. Oct. 31.

Germanium Crystal Rectifiers. Oct. 31.

Joinery. Oct. 31.

Motor Truck Seats. Oct. 31.

Steel and Brass Wood Screws. Oct. 31.

Tractor Track Press. Oct. 31.

#### METROPOLITAN WATER, SEWERAGE AND DRAINAGE BOARD.

Automatic Inlet Control Valves and Control Mechanisms (5). Nov. 14.

Copper Wire Mattresses (240), each 6 ft. 9 in. x 3 ft. 1 1/2 in. and Phosphor Bronze Wire Gauze Screens (240), each 6 ft. 9 in. x 3 ft. 1 1/2 in. (Quot. 8196). Nov. 6.

Sheet-metal Folding Machine, bench or floor type (Quot. 8187). Nov. 1.

#### GOVERNMENT RAILWAYS DEPARTMENT.

Axles, for Locomotives, Tenders and Carriages (Sch. 133). Dec. 31.

Indicating and Recording Instruments, Summation and Remote Metering Protective Relays, Regulating and Rheostat Equipment, and Current Transformers, for Lake Macquarie Power Station (Spec. 1276). Dec. 13.

Multi-cylinder Compression Ignition Oil Engines, flat type (17), approx. 250 B.H.P., at 1,800 R.P.M., and Hydraulic Torque Converters (Spec. 2212). Dec. 6.

Rolled Steel Tyres, for Locomotives, Tenders, Carriages and Waggon (Sch. 131). Dec. 31.

Truck Weighbridges, 35-ton (16), with platforms 16 ft. long by 6 ft. 6 in. wide, equipped with dial indicators and recording heads. Dec. 6.

Used Tubes, Rust Bands and Tyres, Purchase of. Nov. 8.

(Turn to page 80.)

THE AUSTRALASIAN MANUFACTURER  
[October 28, 1950, Page 79.]

## W E M B L E Y

ENGINEERING & REFRIGERATING CO. PTY. LTD.

553-555 Church Street, Richmond, Victoria. Phone JA 3094

- Complete Engineering and Manufacturing facilities
- ★ ICE AND COLD STORAGE PLANTS
- ★ COOLING SYSTEMS
- ★ REFRIGERATION EQUIPMENT
- ★ STEEL TUBE COILS

## Coolmaster AND REFRIGERATION EVAPORATIVE COOLING EQUIPMENT

The COOLMASTER Evaporative Cooler occupies comparatively small space and is self-contained. The only moving parts are a fan and centrifugal pump circulating air and water. A substantial welded structure ensures a long working life.

COOLMASTER  
REFRIGERANT  
CONDENSER  
(Ammonia)

CAPACITY:  
60 Tons Refrig.  
DIMENSIONS:  
10ft. x 8ft. x 16ft.  
High.

The entire construction  
is rendered RUSTPROOF  
with GALVANITE by  
DIMET PROPRIETARY  
LIMITED.



## COOLMASTER Evaporative Cooling Towers

In Types and Models for:

REFRIGERANT CONDENSING, Model CMC, 1-200 Tons.

WATER COOLING, Model CMW, 8-200 G.P.M.

DIESEL JACKET COOLING, Model CMD, 50-1,000 H.P.

AIR AFTER-COOLING, Model CMA, 50-3,000 C.F.M.

## W E M B L E Y

ENGINEERING & REFRIGERATING CO. PTY. LTD.

553-555 Church Street, Richmond, Victoria.

Phone JA 3094





## DIECASTERS

FOR THOSE  
SMALL  
CASTINGS  
6 to 7 oz.  
Capacity  
Zinc Base  
Tin or Lead



MSSA Air Operated      ★      MSS Hand Operated

- HIGH PRODUCTION RATE
- LOW MAINTENANCE COST
- OPERATED BY UNSKILLED LABOUR
- QUICK DIE CHANGE AND SET-UP
- LOW CAPITAL COST
- LOW DIE COST
- LOW PRODUCTION COST

Manufactured by

## METAL PRODUCTS PTY. LTD.

43-59 Sandgate Road, Albion, Brisbane  
QUEENSLAND

UNDER LICENSE TO DIECASTING MACHINE TOOLS LTD., LONDON

Distributed by  
NEW SOUTH WALES: Demco Machinery Co. Ltd., 243 Cleveland St., Redfern.  
VICTORIA: James Forbes & Co., 439 Elizabeth St., Melbourne. WESTERN AUSTRALIA:  
McLean Bros. & Rigg Ltd., Murray St., Perth. NEW ZEALAND: J. C. Riddell & Co.,  
Box 12, Te Anau, Wellington.

## NEW TENDERS - Contd.

### STATE CONTRACTS CONTROL BOARD.

- Ballbearing Bench Grinder. Oct. 30.
- Corrugated Cardboard Containers. Nov. 21.
- Letterpress Printing Ink. Nov. 21.
- Men's Waterproof Coats. Oct. 31.
- Monotype and Linotype Metal, Purchase of. Nov. 21.
- Poultry Equipment. Oct. 30.
- School Furniture. Nov. 7.
- Scrap Metal, Purchase of. Nov. 1.
- Screwcutting Bench Lathe. Oct. 30.
- Spray Drying Plant. Nov. 28.
- Woodworking Machinery. Oct. 30.
- Winch. Nov. 9.

**SYDNEY CITY COUNCIL.**  
Heavy Duty Trailer Mower Units (3). Oct. 30.  
Steel Reinforcement, for Concrete Mixing Plant. Nov. 7.

**SYDNEY COUNTY COUNCIL.**  
Miscellaneous Piping, for Pyrmont "B" Power Station (Spec. 1468). Nov. 23.  
Overhead Ash Handling Cranes, for Bunnerong "B" Power Station (Spec. 1481). Nov. 23.  
Stoker Ram Boxes, for Bunnerong "A" Power Station (Spec. 1467). Nov. 18.  
Supervisory Control Equipments, for City North Sub-station and City Sub-station (Spec. 1457). Jan. 18.  
Synchronous Motor Operated Time Switches (Spec. 1487). Nov. 23.

### MISCELLANEOUS.

- Blade Graders, 12 ft. (6), new or good second-hand, heavy type four-wheel, preferably with pneumatic tyres, for Snowy Mountains Hydro-Electric Authority. Oct. 31.
- Crawler Tractor, approx. 40 h.p., equipped with suitable Angle Blade Bulldozer, for Municipality of Casino. Nov. 14.
- Outdoor Oil Circuit Breakers (11), 33,000 volt., for Newcastle City Council. Extended to Nov. 27.
- Overhead Travelling Crane, 120-ton, for Snowy Mountains Hydro-Electric Authority (Con. 5003). Nov. 13.
- Overhead Travelling Crane, 85-ton, for Snowy Mountains Hydro-Electric Authority (Con. 5004). Nov. 13.
- Pumping Plant, deep-well type, electrically-driven, for Cooma Water Supply Augmentation (Spec. 120-49/50). Dec. 18.
- Pumping Plant, electrically-driven Bore Hole Type, for Mendooran Water Supply (Spec. 114-49/50). Jan. 13.
- Refuse Chain Feed with sprockets, return idlers and drive; Unit capable of delivery 4,000 cub. ft. of heated air per minute, with temperature ranging from 169 degrees F-220 degrees F., pressure from 0.5 lb. per square inch, for Municipality of Canterbury. Nov. 6.

(Turn to page 81.)

## JUST A PIECE OF TUBING



## BUT IT CAN MEAN MORE PROFITS FOR YOU

Manufacturers and designers the world over are continually finding new and profitable uses for steel tubing. In the design of modern furniture, in the manufacture of such diverse articles as buses, fishing rods and refrigerators, steel tubing is playing an essential part. Perhaps in your own factory, processes could be simplified, your own or your client's products modernised, by the use of steel tubing in one of its many and varied forms. Williams, Dredge & Haydon will be pleased to help you with advice in this regard. They carry extensive stocks of solid-drawn weldless and electrically welded steel tubes.

**WILLIAMS, DREDGE & HAYDON**  
PTY. LTD.  
16-22 Foster Street, Sydney (MA 2327 & MA 3166)

## Oildag

Colloidal Graphite in Oil

## Aquadag

Colloidal Graphite in Water



In Fine Dispersions

"dag" is the Registered Trade Mark of Acheson Colloids Ltd., London. It is your Guarantee of Quality in all types of GENUINE Colloidal Graphite Dispersions. These versatile products are indispensable to modern industry where high temperature or lubrication problems arise. Die Casting, Drop Forging, Metal Drawing, and Extrusion firms are invited to inquire for technical information from:



**SOLE AGENTS IN AUSTRALIA:**



### ENGINEERING & INDUSTRIAL SUPPLIES CO.

20 BOND STREET, SYDNEY, N.S.W.    Telephones: BU 1307 and LF 1569.  
Interstate Distributors: Ramsey & Treganowan Ltd., 496 Latrobe Street, Melbourne, Victoria; O. H. O'Brien, 635 Elizabeth Street, Melbourne, Vic.; Atkins (W.A.) Ltd., 884 Hay Street, Perth, W.A.

## CHEMICAL TANKS, DRUMS, CONTAINERS

coated against Acids and Alkalies

Articles of all Shapes and sizes PLASTIC COATED

## J. & F. BROCK BROS.

PTY. LTD.  
STONE ENAMELLERS  
5 Ingham Street, St. Kilda  
Vic. Tel.: LA 1437.



# WELSH GEARS

## GEARS GENERATED . . .

Spur, Single Helical, Double Helical, Bevel, Internal, Worm Wheels, Worms with Ground Threads.

All types of Reduction Gear Units.

Standard Worm Reducers, Internal Reducers, Mill Type Reducers, also custom-built units.

WELSH GEARS INCORPORATE RELIABILITY, LONG LIFE AND HIGH EFFICIENCY



## JOHN WELSH PTY. LTD.

ENGINEERS AND GEARCUTTERS

12-16 MILLER ST., EAST BRUNSWICK, N.H., MELB.  
PHONES: FW 4146-7. TELEGRAMS: "WELSHGEAR" MELBOURNE

### NEW TENDERS - Contd.

Transformers, 2,260-volt, various sizes and quantities, for North West County Council. Nov. 6.

Switchboard, 11,000-volt, for Sutherland Shire Council. Nov. 27.

### VICTORIA

#### POSTMASTER-GENERAL'S DEPARTMENT.

Packing Cases (Sch. V.420). Nov. 21.

#### CITY OF MELBOURNE.

Air Circuit Breakers and Cur-

rent Transformers (Spec. 740/E). Nov. 23.

#### DEPARTMENT OF SUPPLY.

Aircraft Clocks, Purchase of. Oct. 31.

Bandsawing Machine. Oct. 31.  
Blackboards, Easels and Easel Pegs. Nov. 2.

Diameter Wheels. Oct. 31.  
Flannelette Pyjamas. Oct. 31.  
Glass Jars and Scrap Steel, Purchase of. Oct. 31.

Kitchen Accessories. Nov. 2.  
Miscellaneous Aircraft Hose, Purchase of. Oct. 31.

Power Saw Blades, Purchase of. Nov. 2.

Power Transformers. Oct. 31.  
Rubber Track Blocks. Nov. 2.

Surface Table. Nov. 9.

Tents. Nov. 2.

Tools and Gauges. Nov. 9.

Welding Equipment. Nov. 2.

#### GOVERNMENT RAILWAYS DEPARTMENT.

Scrap Non-Ferrous Metal, Purchase of. Nov. 1.

#### MELBOURNE AND METROPOLITAN TRAMWAYS BOARD.

Annual Supplies: Insulators, Tubes and Bushings (Sch. 52); Conduit Fittings (Sch. 54); Mercury Contact Tubes (Sch. 62); Porcelain Resistors (Sch. 64); Porcelain Enamelled Stop Mark Signs (Sch. 72); Telephones and

Radio Valves (Sch. 73); Base Metals and other Alloys (Sch. 77); Non-Ferrous Metal Sheets (Sch. 81); Non-Ferrous Metal Sections and Bars (Sch. 82); Non-Ferrous Metal Tubing (Sch. 83); Bright Mild Steel (Sch. 85); Tool and Special Steels (Sch. 86); Spring Steels (Sch. 87); Conduit Steel, for electrical wiring (Sch. 94); E.W. Pipes and Fittings, A.G. Pipes, Gutter Tiles, Building Bricks, Fire Bricks (Sch. 97); Motor Spirit, Fuel and Lubricating Oils, Greases, etc. (Sch. 100); Steel Sections (Sch. 109); Motor Tyres and Tubes (Sch. 118); (Tender No. 1610). Nov. 6.

(Turn to page 82.)

**IF**—your manufacturing schedule calls for a plastic moulding to close tolerances, in any colour, and, above all, in strictest confidence, consult without delay

## CASOLIN PTY., LTD.

632 Botany Road  
ALEXANDRIA, N.S.W.

Phones: MU 3051-2-3

CUSTOM MOULDERS IN ALL THERMOPLASTICS

## AeroLift

### INDUSTRIAL FORK LIFT TRUCKS

Up to 1 ton Loads 4, 9 & 12 ft. Lifts.

FOR SPECIFICATIONS, INSPECTION, DEMONSTRATION  
CONTACT YOUR STATE DISTRIBUTOR

N.S.W.: Frank J. Hodgson Pty. Ltd., 35-41 Reynolds St., Balmain. (WB 2443).

Q.L.D.: Messrs. Alfred Snodgrass, Anthon Pty. Ltd., 74-76 Eagle St. Brisbane, S.I. (B 3728).

W.A.: Messrs. Wigmore Ltd., 613 Wellington St. Perth. (RA2380)

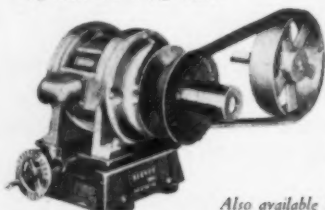
S.A.: Power Plant Ltd., 190 Currie St. Adelaide. (Can. 663)

Sole Australian Representatives:  
**LIBERTY MOTORS (AUST.) PTY. LTD.**  
Materials Handling Division, 131-7 Lansdale Street, Melbourne (JM 1993)

# REEVES

## VARI-SPEED MOTOR PULLEY

**STEEP** Angle Discs with Narrower Belts and **LIGHT SERIES** Unit added. They convert any standard constant speed motor to a variable Speed Drive within 4 : 1 ratio. Sizes from  $\frac{1}{4}$  H.P. to  $7\frac{1}{2}$  H.P.

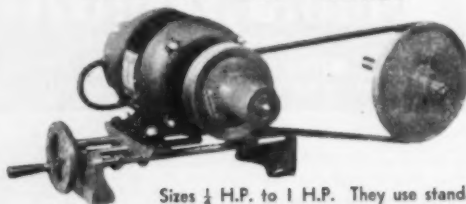


### The NEW "356" Series

Standard Unit. Sizes 1 H.P. to  $7\frac{1}{2}$  H.P. Any desired speed by a turn of the Hand Wheel.

Also available in Countershaft Units.

### The NEW "800" SERIES



Sizes  $\frac{1}{4}$  H.P. to 1 H.P. They use standard "A" or "B" Section "V"-Ropes. All sizes available EX STOCK.

Also the  
**REEVES VARIABLE  
SPEED TRANSMISSION**  
in 38 Different Sizes and Models

**PAGE ENGINEERING CO. PTY. LTD.**

401 COLLINS STREET, MELB. C.I. Phone: MU 3593  
N.S.W. REPRESENTATIVES:— MCKINLAY, FLETCHER PTY. LTD.  
277 CLARENCE STREET, SYDNEY. Phone: M 2775

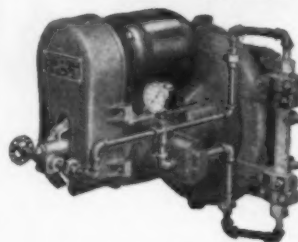
## ENGINEERS!

"We Give You the Tip" —→  
The famous brand "Wimet" Tungsten Carbide tips and tools  
Now Available from Stock

Australian Agents:  
**THOMPSON & WILLIAMS**  
28 MARKET STREET, MELBOURNE  
Telephones: MB 2121, MB 2122.

## ENTERPRISE OIL BURNER

### BURNS BUNKER FUEL OIL



Semi-automatic and Manually controlled oil burners for all purposes.

Efficient, economical conversion of oil to heat engineered for reliable service from earlier pioneer developments.

MANUFACTURED BY

**Automatic Heating Appliances Pty. Ltd.**

41-43 PARK STREET, SOUTH MELBOURNE

Telephone: MX 3733

## NEW TENDERS — Contd.

Stationary Air Compressor, 600 cub. ft. (Tender 1605). Nov. 13.  
Ticket Issuing Machines (Tender 1607). Nov. 15.

### MELBOURNE HARBOUR TRUST.

Lubrilift. Nov. 3.  
Mobile Crane, slewing type, 10-ton, with 40-ft. Jib. Nov. 3.  
Refractory Lanterns (12), 140-watt, with 19 only Auxiliary Units. Nov. 3.  
Sets of Resistors (2), for 70 H.P. 3-phase Motor. Nov. 3.  
Steel Pipe Light Brackets. Nov. 3.

### MELBOURNE AND METROPOLITAN BOARD OF WORKS.

Cast Iron or Asbestos Cement Pressure Pipes, 3-in. dia., 30,000 lin. ft.; 4-in. dia., 100,000 lin. ft.; 6-in. dia., 50,000 lin. ft. Nov. 8.  
Compression Testing Machine, 100-ton, for Concrete. Nov. 21.  
Hexagonal Black Nuts, 150,000 2-in. and 100,000 1-in. dia., British Whitworth standard, B.S.S., 28 1832. Nov. 21.

### STATE ELECTRICITY COMMISSION.

Bunker Discharge Dredgers and Brown Coal Bunkers (Spec. 50-51/148). Nov. 29.  
Cold Sawing Machines (Spec. 50-51/156). Nov. 22.  
Lathes, for Maintenance Workshops (Spec. 50-51/155). Nov. 22.  
Portable Generating Sets (Spec. 50-51/150). Nov. 22.  
Shaping and Slotting Machines (Spec. 50-51/154). Nov. 22.  
Teleprinter Machines (Spec. 50-51/119). Jan. 17.

### MISCELLANEOUS.

Automatic Traffic-Control Light System, Supply and installation, for City of Camberwell (Con. 6/51). Nov. 13.

Double Drum Power Control Units (2), (Con. 63); Front End Loader, (Con. 64), for Ballarat Water Commissioners. Nov. 6.

## QUEENSLAND

### STATE ELECTRICITY COMMISSION.

Air Break Switches and Earth Leakage Protection Equipment (Spec. 233). Extended to Nov. 15.  
Switchgear: (132, 66, 22, 11 & 5 KV), Relays and Carrier Current Communication Equipment (Spec. T.F./3). Extended to Jan. 17.  
Water Tube Boilers (Spec. 224). Extended to Nov. 15.

STATE STORES BOARD.  
Galvanised Iron, Plain and Corrugated (Tender A.150). Nov. 9.

MISCELLANEOUS.  
Fabricated Structural Steel Towers (Spec. 197/50), for Townsville Regional Electricity Board. Dec. 4.

## SOUTH AUSTRALIA

DISTRICT CONTRACT BOARD.  
Steel Wheels, 12 in. dia., to take 9.09 tyres, 5 stud fitting, 2 in. dia. holes, 6 1/2 pitch circle, for stud holes. Oct. 31.

## CURRENT TENDERS

The following tenders have appeared in previous issues and are still current.

## COMMONWEALTH

### POSTMASTER-GENERAL'S DEPARTMENT.

Bolts, Miscellaneous (Sch. C-6452). Nov. 9.  
(Turn to page 83.)

## FOR ALL TUBE AND PIPE BENDING PROBLEMS

Specialists in  
Steam and Refrigeration Coil Making  
General Pipe Bending and Coppersmithing  
Also equipped for  
Arc and Oxy Welding—Fabricating

**W. R. SKINNER**  
186 Sussex Street, North Coburg, Victoria

### CURRENT TENDERS—contd.

Bimotional Switch Wiper Assemblies and Parts (Sch. C-6436). Dec. 19.  
Communication System between Sydney and Melbourne (Spec. C-8157). Extended to Jan. 18, 1951.  
Compressed Gases (Sch. C-6455). Nov. 9.  
Induction Coils (Sch. C-6391). Nov. 2.  
Intercommunication Telephones (Sch. C-6384). Nov. 2.  
Interruption Cable (Sch. C-6417). Nov. 9.  
Machine Telegraph Equipment (Sch. C-6446). Dec. 5.  
Mechanics Tools, Gauges, etc. (Sch. C-6411). Nov. 23.  
Pliers and Screwdrivers (Sch. C-6418). Nov. 30.  
Portable Power Driven Saws (Sch. C-6453). Nov. 14.  
Power Rectifiers (Sch. C-6444). Nov. 14.  
Printed Departmental Headed Paper (Sch. C-6457). Nov. 9.

Printed Matter, Memo. and other Books (Sch. C-6454). Oct. 31.  
Receivers and Parts (Sch. C-6296). Dec. 7.  
Relay Strips and Mountings (Sch. C-6419). Dec. 7.  
Resistors and Reactances (Sch. C-6437). Dec. 19.  
Spanners (Sch. C-6434). Dec. 19.  
Sub-Station Accessories (Sch. C-6420). Dec. 7.  
Switchboard Keys (Sch. C-6404). Nov. 18.  
Telephone Meters (Sch. C-6390). Nov. 9.  
Teletypewriter Tables and Silence Covers (Sch. C-6439). Oct. 31.  
Television Installation at Sydney (Sch. C-6423). Nov. 21.  
Tinware (Sch. C-6456). Nov. 16.  
Tools-Adjusters and Benders (Sch. C-6429). Dec. 14.  
Tools, for Mechanics, Exchange and Sub-station Maintenance (Sch. C-6416). Nov. 30.  
Transformers (Sch. C-8398). Nov. 18.  
Trunk Test Boards (Sch. C-6432). Oct. 31.

### AUSTRALIAN ALUMINIUM PRODUCTION COMMISSION.

Apron Feeder, 75 tons per hour (Spec. M.25). Nov. 13.  
Diesel Motor Trucks, heavy-duty (Spec. M.24). Nov. 13.  
Galvanised Steel Cable Trays (Spec. E.30). Nov. 20.  
Kier Slurry Pumps (Spec. CH. 9). Nov. 13.  
Mild Steel Billets, 450 tons 4 in. x 4 in. (Spec. M.28). Nov. 13.  
Rail Track Tippler, 140 deg. (alternatively 50 deg.). (Spec. M-26). Nov. 20.  
Switchyard Steel Rails, 27 tons (Spec. E.28). Nov. 13.  
Transformer, single-phase, 15 K.V.A. (Spec. E.29). Nov. 6.  
Water Piping, 16,300 ft. (from 6 in. to 1 in.). (Spec. C.7). Nov. 13.

### DEPARTMENT OF CIVIL AVIATION.

Approach Light Fittings, high intensity (Sch. 308). Nov. 14.  
Rotating Light Beacons, for Airport (Sch. 307). Nov. 14.

### DEPARTMENT OF WORKS AND HOUSING.

2 Plate Electric Stoves (1,000), for Canberra. Nov. 21.

(Turn to page 84.)

## ELEVATORS and CONVEYORS



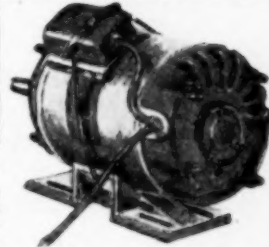
GRAIN ELEVATOR BOOT  
Capacity: 300 tons per hour

**ROBERT BODINGTON Pty. Ltd.**  
Engineers

Queensberry and Leicester Streets,  
Carlton, Melbourne, Victoria.  
Established 1854

## ELECTRIC MOTOR PROTECTION!

### THE OTTER PROTECTIVE THERMOSTAT



The entirely new OTTER principle is 100 per cent. simple and safe. Otter Engineers have developed this unique principle, the only one which eliminates previous drawbacks to thermal overload protection.

The contacts start to COMPRESS as the motor temperature rises to the critical point. At 170° F. the contacts snap open.  
**YOU CANNOT FUSE AN OTTER! TRY IT!**

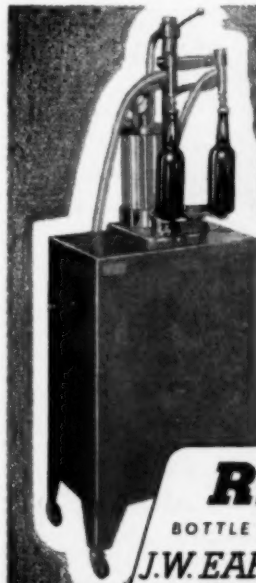
It enables a motor to be left running unattended for long periods without risk of fire, overheating and burning out. The OTTER switches off a motor if it remains running on the starter windings for more than 10 seconds when cold or 2 seconds when hot. The OTTER also affords progressive current overload protection until a motor reaches a temperature of 170° F., when it is switched OFF.

*Sole Australian Distributors:*

**INDUSTRIAL CONTROL COMPANY OF AUST.**  
243 Castlereagh St., Sydney. 'Phones: MA 3448, MA 7689.

and must remain OFF until the motor cools down some 20° F. The OTTER Motor Protection Thermostat (EXTERNAL fitting type) just clamps round the body of the motor. Any qualified electrician can do the job within 10-15 minutes, as the motor need not be removed.

For motor manufacturers and motor repair men there is also available the INTERNAL fitting type (not illustrated here). The OTTER (external fitting type) measures only 3/4 in. x 3 in. x 1 1/2 in., and can be supplied for protection of A.C. single-phase motors from 1/2 to 1 hp.



### "Reilax" Double-head Bottle Filler fitted with "Auto-Return"

Fills any size bottle to a predetermined level without spill or waste; draws liquids from bulk containers at floor level. Average speed on 26oz. wines or spirits of 50 doz. per hour.

DISTRIBUTORS: E. W. Cox, 14 Wentworth Ave., Sydney; W. H. Evans Ltd., Perth; Weston's Pty. Ltd., Sydney, Brisbane; Simpson Agencies Pty. Ltd., 32-34 Little Lonsdale St., Melbourne; Topp and Farmer, Kalbarra Chambers, James Place, Adelaide, S.A.

## REILAX

BOTTLE FILLING EQUIPMENT

**J.W. EARNSHAW Pty. Ltd.**

189-195 Pacific Highway, North Sydney

Telephone XB 3950







## ANCHOR



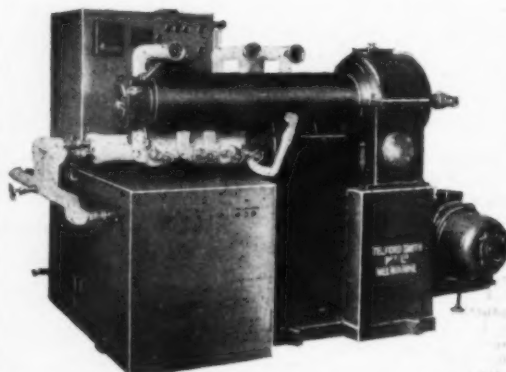
**TRIPLE GEARED  
PULLEY BLOCKS**  
**HALF TON HIGH-  
SPEED BLOCKS**  
**GIRDER TROLLEYS**  
**HAND WINCHES**  
**STACKERS**  
**LIFTING TRUCKS**  
**JACKS, RACK AND  
PINION TYPE**  
(ALL STEEL)

Obtainable from Leading Merchants

**ANCHOR ENGINEERING CO. PTY. LTD.**  
 91 CROWN STREET, RICHMOND, VICTORIA. TELEPHONE: JA 2500  
TELEGRAPHIC ADDRESS: ANCHORINE MELBOURNE  
**JOHNSON & GASTON PTY. LTD.**  
Sales representatives for SYDNEY, BRISBANE, ADELAIDE, PERTH and CHRISTCHURCH, N.Z.

## EXTRUDERS for PLASTICS

Plastics Extruders for Tubes, Rods, Monofilaments and Wire Covering. **RIGID AND FLEXIBLE.**



**2 1/2 in. OIL-HEATED EXTRUDER**  
High Temperature Thermostatic Control — instant cooling.  
Electrically-heated head.

# Telford Smith

**PTY. LTD.**  
**ENGINEERS**

344-346 DORCAS ST., SOUTH MELBOURNE, 5CS  
PHONES: MX 1144, 1145

### CURRENT TENDERS — contd.

Disintegrator Pumping Units and Incidental Equipment, for Nightsoil Depot, Ararat. Nov. 15.  
Metal Clad Switchboard, 10-panel, 11,000 volt., Supply and delivery to Port Moresby. Nov. 7.  
Oil Fired Range, for Randwick A.R.A. Field Force. Oct. 31.  
Stone Planing Machines (4), for Stone Yard, Canberra. Dec. 12.

### GOVERNMENT RAILWAYS DEPARTMENT.

Covered Goods Wagons. Extended to Nov. 21.  
Diesel Electric Locomotives, 3 ft. 6 in. Jan. 9.  
Diesel Electric Locomotives. Nov. 14.  
Horizontal Boring Machine. Dec. 12.  
Locomotive Firebricks. Oct. 31.  
Open Goods Waggon; Freight Car Bogies. Extended to Nov. 21.



## INDUSTRIAL ELECTRICARWORKS TRUCKS

FOR SPECIFICATIONS, INSPECTION, DEMONSTRATION  
CONTACT YOUR STATE DISTRIBUTOR

N.S.W.: Frank J. Hodgson Pty. Ltd., 35-41 Reynolds St., Balmain. (WB 2443).  
Q.L.D.: Messrs. Alfred Sashaf, Anchor Pty. Ltd., 74-76 Eagle St. Brisbane, B.I. (B 3728).  
W.A.: Messrs. Wigmore Ltd., 613 Wellington St., Perth. (BA2280).  
S.A.: Power Plant Ltd., 100 Currie St., Adelaide. (Cont. 6433).

Sole Australian Representatives:  
**LIBERTY MOTORS (AUST.) PTY. LTD.**  
Materials Handling Division, 131-7 Lansdale Street, Melbourne (JM 1993)

### STATES

#### NEW SOUTH WALES

##### GOVERNMENT RAILWAYS DEPARTMENT.

Air Break Isolating Switches (241), Outdoor Manually and Power Operated; current ratings, 300-1,200 amperes at voltages 23 k.v. to 132 k.v. (Spec. 1270). Nov. 15.  
Coal Weighers (Spec. 1274). Nov. 8.  
Disconnecting Switches (Quot. CE-1299). Nov. 23.  
Electric Overhead Travelling Crane (75 ton), (Spec. 504). Extended to Nov. 1.  
Overhead Wiring Equipment, for the Electrification of Railways Tracks. Jan. 24.  
Sawdust, Annual Contract (Sch. 146). Dec. 31.

Railway Wheel and Axle Lathes. Nov. 14.  
Sleeping Cars. Dec. 12.  
Steel Sections and Plates. Oct. 31.  
Water Tank Wagons. Nov. 7.

##### DEPARTMENT OF MAIN ROADS.

Span Riveted Steel Through Girder Railway Bridges, 80 ft. (3). Nov. 1.  
Steel Bolts and Nuts, 42 tons. Nov. 9.  
Steel Plates and Sections, 1,200 tons. Nov. 9.  
Steel Reinforcing Bars, 1,300 tons. Nov. 9.

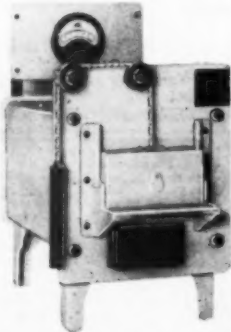
##### DEPARTMENT OF PUBLIC WORKS.

Elevated Tank, M.S., 50,000 gallons, Supply and erect, for Howlong Water Supply (Spec. 46-48/49). Oct. 30.  
Hex. Bright Steel Bar (9 tons). Nov. 1.  
Pumping Plant, Electrically Driven (Spec. 117-49/50), for Alstonville Water Supply. Nov. 20.  
R.D. Steel, "Vibrac" or Equiv. (9 tons). Nov. 1.  
R.D. Steel, "Durax" or Equiv. (12 tons). Nov. 1.  
R.D. Bright Steel Shafting (12 tons). Nov. 1.  
Regulating Transformers, 11-6.6 KV, for Southern Electricity Supply. Nov. 13.

(Turn to page 85.)



## "M & S" ELECTRIC FURNACES



Specially designed for laboratories and heat treatment of small quantities of metal parts. Adequate for all average engineering shop work. Performance fully guaranteed up to 1,000° C.

**W. J. MILLS**  
187 NELSON STREET  
ANNANDALE, N.S.W.

## AUSTRALIAN BENTONITE (COLLOIDAL CLAY) AIR FLOATED

For Foundry Sands, Suspensions, Emulsions, Bonds Horticultural Sprays and Dusts, and Many Other Uses where High Gelling and Emulsifying ARE DESIRED.



Ready for Immediate Delivery.  
Processed by

**C. P. CURLEWIS & CO.**  
PTY. LTD.

Chemical Manufacturers  
Mitchell Road, Alexandria, N.S.W.  
Phone: LA 3258 (2 lines)

## MAGNESIUM OXIDE

Pure Commercial 98.99%  
2nd Grade 94.95%

Interstate Representatives:  
**RAMSAY & TREGANOWAN LTD.**  
Latrobe Street, MELBOURNE.  
**CAMPBELL BROS. PTY. LTD.**  
Bowen Hills, BRISBANE.

### CURRENT TENDERS — contd.

Sewage Ejector Units, Nov. 3.  
Square Key Steel (1½ tons), Nov. 1.

Transformers, 132-66/11 KV, 27. MVA (2), for Southern Electricity Supply, Nov. 11.

#### DEPARTMENT OF SUPPLY AND DEVELOPMENT

Automatic Ice Cream Machines, Nov. 14.

Paint, Oct. 31.

Signal Generators, Oct. 31.

#### MARITIME SERVICES BOARD.

Bar Bending Machine, portable, power-operated (Con. 5046), Oct. 30.

Single End Tenoning Machine (Con. 5047), Nov. 6.

Structural Steel Work, for Sheds of 2 r.c. Ferry pontoons (Con. 50/44), Oct. 30.

Structural Steelwork, totalling 385.5 tons, for Shed at Pyrmont (Con. 50/42), Jan. 8.

Structural Steelwork, for Fitters' Shop (Con. 50/41), Oct. 30.

#### METROPOLITAN WATER, SEWERAGE AND DRAINAGE BOARD.

C.I. Penstocks (3), 10 ft. diameter (Job 2447), Extended to Oct. 31.

Chain Saw, 72 in., petrol engine driven (Quot. 8155), Nov. 1.

M.S. elec. welded, cement lined pipe fittings, fabricated from Standard 20 ft. x 48 in. dia. M.S. Pipes, supplied by the Board (Job 2456), Oct. 31.

Platform Hoists, Control Gear, etc., 4,000 lb. min. cap. (2, 4, or alternatively 6), Supply and instal (P.T. 355), Oct. 31.

Pneumatic-tyred Mobile Cranes (2), new or second-hand (P.T. 375), Nov. 28.

Steel Silo, 820-ton cap., Supply and erect, at Warragamba Dam (Job 2453), Oct. 31.

Steam Piping, flanged and bent, approx. 800 ft. of 6 in. nominal bore (Job 2458), Oct. 31.

Steel Wire Rope, for Cableway, (2-3½ in. circ., approx. 7,500 ft.; 2-3 in. circ., approx. 6,800 ft.; 2-2½ in. circ., approx. 3,400 ft.), (Quot. 8144), Nov. 6.

#### STATE CONTRACTS CONTROL BOARD.

Continuous Stationary Typewriters, Nov. 1.

Excavator, Oct. 31.

Medallions, etc. Nov. 7.

Photographic Reproduction Equipment, Nov. 7.

#### SYDNEY COUNTY COUNCIL.

Circuit Breaker Switching Equipment, low voltage, air or oil (Spec. 1456), Jan. 18.

#### MISCELLANEOUS.

Carbonising Plant, consisting of vertical retorts, for Bathurst City Council, Oct. 31.

House Service Meters (6,000), single phase, 240 volt, for Newcastle City Council, Oct. 30.

(Turn to page 86.)



"Check me over, Doc., I'm afraid I've been working too hard since they put in air conditioning"

### WHAT happens when a plant is air conditioned?

On the human side, comfortable workers will be able to do more with less effort. They will be less likely to absent themselves. It will be easier to obtain staff. They will be less likely to move to apparently greener pastures.

Precise machinery will not be subjected to radical changes in temperature and humidity. It will be less likely to get out of adjustment. It will "sweat" less . . . corrode less. It will produce a more uniform product.

Air conditioning can keep raw materials uniform, too. And contribute to a more uniform product. Textiles, pharmaceuticals, paper and sweets (to mention a few) may be affected adversely by fluctuating temperatures and humidities. They may turn soft . . . may take on moisture . . . may "spoil."

Over-all, air conditioning removes many of the variables previously introduced by the passing of the seasons, hot spells, rainy spells and changing winds in industrial atmospheres. Why not let a Carrier representative explain the definite advantages and savings to be gained by using Carrier Air Conditioning?

**Carrier**

AIR CONDITIONING LIMITED

36-40 Bourke Street,  
East Sydney, N.S.W.  
Phone: FA 7144.

15-17 Lincoln Square,  
South Carlton, N.Z.,  
Melbourne, Vic.  
Phone: FJ 4234.

Penny's Building,  
204-208 Queen Street,  
Brisbane, Qld.  
Phone: B 8148.

**HARTFORD**  
FIRE INSURANCE  
COMPANY

ESTAB 1810

Incorporated in the State of  
Connecticut, U.S.A.—Limited  
Liability.

Assets Exceed £100,000,000

**FIRE - ACCIDENT - MARINE**

Head Office for Australia:

26 O'Connell St., Sydney

Branch Offices:

Throughout the Commonwealth

AUSTRALIAN ADVISORY BOARD:

H. C. STEINER

GEORGE PATTERSON

LIEUT.-GENERAL SIR IVEN MACKAY, K.B.E., C.M.G., D.S.O., V.D.

*Genuine*  
**AULD** *patent*  
**REDUCING VALVES**  
*Now Available -* for STEAM, AIR,  
GASES and WATER

Simple in design, reliable and accurate in performance. A VALVE TO SUIT ALL CONDITIONS.  
"STANDARD" pattern, where reduced pressure is not less than 2/5ths of Inlet pressure.  
"QUITTETIE" pattern, where large volumes are to be passed.  
"FULL BORE" pattern, where reduced pressure is less than 2/5ths of Inlet pressure.  
Consult your representative for advice and recommendations on pressure reduction and regulation problems. Write for literature.

Australian Representative: **E. TRELIVING & SON LTD.**  
Light Square, Adelaide. Phone: C 4075.

Interstate Representatives—Qld.: Bakers & Ridgeway Pty., 318 Adelaide St., Brisbane, N.S.W.: Duff & Macintosh Pty. Ltd., Austral Chambers, 29 Pitt St., Sydney, Vic.: H. W. J. Anderson Pty. Ltd., 35 William St., Melbourne, Tas.: Douglas & Fraser, 41 Paterson St., Launceston, W.A.: Atkins (W.A.), Ltd., 894 Hay St., Perth.

manufactured by **DAVID AULD & SONS, LTD.**, Glasgow, Scotland  
reducing valve specialists for over 100 years

**CURRENT TENDERS - contd.**

Medium Duty Tandem Drive Graders (2), alternatively, one Heavy Duty Tandem Drive Grader; Crawler Tractor Loader, approx. one cub. yd. bucket cap.; Pneumatic-tired Loaders (2), approx. half cub. yd. cap.; Motor Trucks (3), approx. 3-ton cap., fitted with tipping bodies; Utility Trucks (3), approx. 10 cwt., alternatively station waggons of approx. 10 cwt. cap.; Pneumatic-tired Tractor, complete with grass mowing attachment, for City of Parramatta. Nov. 6.

Metal-Clad Switchgear, 11,000-volt. and L. T., for Clarence River County Council (Spec. 95/50). Dec. 20.

Stainless Steel Sheathed Overhead Pilot Cable, for Newcastle City Council. Nov. 6.

Transformers (2), 10,000 K.V.A., 33,000-volt., and (3), 5,000 K.V.A., 33,000-volt., for Newcastle City Council. Oct. 30.

**VICTORIA**

**GOVERNMENT RAILWAYS DEPARTMENT.**

Anode Lead Wall Bushing Insulators. Nov. 1.

Bare Hard Drawn Stranded Copper Conductors. Nov. 8.

Centrifugal Sand Pump. Nov. 1.

Copper Plates. Nov. 1.

Galvanised Fencing Wire. Nov. 1.

Lead Acid Batteries. Nov. 15.

Printing Machine, Quad Crown 2-Revolution. Nov. 8.

Roller Bearings. Nov. 1.

**CITY OF MELBOURNE.**  
Fabricated Structural Steelwork (Spec. 736/E). Extended to Nov. 6.

Street Lighting Lanterns (Spec. 725/E). Dec. 4.

**DEPARTMENT OF PUBLIC WORKS.**

Briquette Hot-water Service, for Geelong South. Oct. 31.

Electric Hot-water Service, for Bellarine. Oct. 31.

Fuel Hot-water Service, for Ross Creek. Oct. 31.

Fuel Hot-water Services (2), for Sale. Oct. 31.

Fuel Hot-water Service, for Hastings. Nov. 14.

Fuel Hot-water Service, for Mitta Mitta. Oct. 31.

Fuel Hot-water Service, for State School, Mitta Mitta. Oct. 31.

Hot-water System, for Omeo. Oct. 31.

Passenger Lift, for District Hospital, Kyneton. Oct. 31.

Sector Type Spillway Gates (8), 26 ft. x 23 ft., for Somerset Dam. Nov. 27.

**DEPARTMENT OF SUPPLY.**

Double Swaging Hammer, Purchase of. Nov. 2.

Electric Motors, various sizes and capacities, mostly D.C. Purchase of. Nov. 7.

**DEPARTMENT OF WORKS AND HOUSING.**

Structural Steel Work, for Essendon. Nov. 14.

(Turn to page 87.)

**ELECTRICAL GRID RESISTANCES**

One of our many Specialities

Contractors to N.S.W. Railways and 30 years in N.S.W. Tramways.

**TAYLOR & WEARING**

UNION FOUNDRY

George Street, Redfern, N.S.W.

Est. 1859. Tel.: MX 2118.

**MILLING GEAR CUTTING WELDING, ETC.**

Machines Designed and Constructed to Special Requirements

**H. A. WENTWORTH**

PTY. LTD.

INDUSTRIAL ENGINEERS

558-548 Little Lonsdale Street, Melbourne, Vic. MU 4300.

**TADCO**

D.C.

**MOTORS**

1 and 1/2 H.P. and

Reverse Current Relays

Factory Representatives for all States

**R. B. Churchley Pty. Ltd.**

175 WILLIAM ST., MELBOURNE

Tel.: MU 1517, MU 4877.

**BAIRD & LITHO & PRINTING CO.**  
Manufacturers of  
**SIMPLEX TRANSFERS**  
RELINTING NO 70427070 TO CUT ANY SURFACE  
**140 QUEEN ST. MELB. MU3618**

**COAL & COKE**

for Manufacturers, Blacksmiths, etc.

**BEST STEAMING COAL** for all classes of Boilers and Household purposes

**PROMPT DELIVERY**

**JONES BROS. COAL**

PTY. LIMITED

Bridge Road, Pyrmont, N.S.W.

Phone: MW 2691 (5 lines)

*Precision-built for accuracy*



## THE SIRIUS "MINOR" BUILDER'S LEVEL

Precision built for use by builders, architects and engineers, the Sirius "Minor" has accuracy of 1 inch at 300ft. . . . screw focussing with glass diaphragm . . . magnification of X10.

Complete with polished case and rigid tripod.  
£36, plus tax.

Horizontal circle reading to single degree,  
extra £2/10/-, plus tax.



**E. ESDAILE & SONS PTY. LTD.**  
42 HUNTER ST. SYDNEY, BW 8631

SURVEYING, NAUTICAL INDUSTRIAL & OPTICAL INSTRUMENTS

### CURRENT TENDERS — contd.

**GRAIN ELEVATORS BOARD.**  
Overhead Crane Type Runways,  
Structural Steel supplied. Nov. 27.

### MELBOURNE AND METRO- POLITAN BOARD OF WORKS.

C.I. or Asbestos Cement Pressure  
Pipes, 3 in. dia., 30,000 lin. ft.;  
4 in. dia., 100,000 lin. ft.; 6 in. dia.,  
50,000 lin. ft. Nov. 8.

Crawler Tractors (20), Class 1,  
3 and 4, with Dozer Blades and  
Power Control Units. Nov. 21.

Pressure Pipes, c.i. or asbestos  
cement: 3-in. dia., 30,000 lin. ft.;  
4-in. dia., 100,000 lin. ft.; 6-in. dia.,  
50,000 lin. ft. Nov. 8.

### MELBOURNE HARBOUR TRUST.

Radar Equipment, Supply and  
installation, in the S.H.B. "Chas.  
A. Phayer." Nov. 3.

**HEAVENLY  
SMOOTHNESS**



**PIONEER  
FOR SPRINGS**

Est. 1890

Pioneer Spring Co. Ltd., McEvoy  
St., Alexandria, Sydney, MX 2534

P. 88

### MELBOURNE AND METRO- POLITAN TRAMWAYS BOARD

Blowout Coils, for Line  
Breakers, for Tram Cars (Tender  
1598). Oct. 30.

Spacing Pieces, for Line  
Breakers, for Tram Cars (Tender  
1599). Oct. 30.

Insulation Plates, for Line  
Breakers, for Tramcars (Tender  
1601). Oct. 30.

Vitreous Enamelled Resistance  
Tubes, for Line Breaker, for Tram  
Cars (Tender 1597). Oct. 30.

### POSTMASTER-GENERAL'S DEPARTMENT.

First Aid Equipment (Sch. V-  
388). Oct. 31.

### STATE ELECTRICITY COM- MISSION.

Copper Conductors and Trolley  
Wire. Nov. 29.

Lathes, for Central Base Work-  
shops (Spec. 50-51/147). Nov. 22.

Metal Plant Switchgear and Ac-  
cessories, 20 KVA, 25 Cycles (Spec.  
50-51/100). Nov. 22.

Outdoor Switches and Access-  
ories, 22 kV and 66 kV (Spec. 50-  
51/44). Nov. 1.

Paper Double Braided Aerial  
Cable (Spec. 50-51/101). Nov. 15.

Paper and Varnished Cambric  
Insulated Cable. Feb. 7.

Plate Girder Bridges (Spec. 50-  
51/116). Nov. 22.

Portable Air Compressors (Spec.  
50-51/136). Nov. 1.

Single Phase, A.C. Kilowatt  
Hour Meters (Spec. 50-51/111).  
Nov. 15.

Sleeper Plates, for Movable  
Rail and Dredger Tracks. Nov. 8.

Steel Frames and Concrete Buc-  
kets. Nov. 15.

(Turn to page 88.)

**ADDITIONAL  
S-T-R-E-N-G-T-H**  
and Protection for  
Your Products  
with



**REINFORCED  
FISH-BAK**



**TOUGH  
2-PLY KRAFT  
with Bitumen Centre**

### ● Reinforced Three ways with Twine

Reinforced FISH-BAK is a fine surfaced wrapping material  
suitable for use where more harsh surfaces might scratch.  
Reinforced FISH-BAK is double faced with smooth, strong  
Kraft internally reinforced with twine and Plastic Bitumen.

### Reinforced FISH-BAK Waterproof as a Fish's Back

Is the ideal wrap for all goods requiring real protection  
against moisture and air, such as foodstuffs, chemicals,  
clothing, woollens, leather and commodities subject to loss  
through damp.

A special cement makes the package airtight when long-  
distance transport is planned.

Reinforced FISH-BAK is supplied in any width up to 72  
inches, and in rolls 300 to 3,000 feet.

Manufactured by

**A. ABRAHAM & SONS  
PTY. LTD.**

314 Young Street, Fitzroy, Victoria. JA6074, JA3114.

Also at 27 McEVoy STREET, ALEXANDRIA, N.S.W.



**FERRO ENAMELS (AUST.) PTY. LTD.**

Parent Company: **FERRO ENAMEL CORPORATION**  
CLEVELAND, OHIO, U.S.A.

Associated Companies in: **ENGLAND, HOLLAND, CANADA, FRANCE,  
BRAZIL, ARGENTINE, MEXICO, SOUTH AFRICA.**

**WORLD LEADERS IN THE VITREOUS ENAMEL AND CERAMIC FIELDS**

## MANUFACTURERS IN AUSTRALIA OF:—

PORCELAIN ENAMEL FRITS AND POWDERS; COLOUR OXIDES  
FOR THE ENAMELLING AND CERAMIC INDUSTRIES; POTTERY  
CLAYS, CASTING SLIP, GLAZES, STAINS, Etc.

## ENAMELLING SUPPLIES:—

PORCELAIN MILL BALLS; PORCELAIN MILL LININGS; METAL  
CLEANERS; ASBESTOS GLOVES; ENAMELLING CLAY, Etc., Etc.

## ENGINEERS TO THE ENAMELLING AND CERAMIC INDUSTRIES — YOUR EQUIPMENT DESIGNED, SUPPLIED AND INSTALLED:—

FURNACES; KILNS; CHARGING FORKS; BALL MILLS; DRIERS;  
OIL BURNERS, BLOWERS, Etc., Etc.

27 BOURKE ROAD,  
ALEXANDRIA, N.S.W. TEL. MX 1151

### CURRENT TENDERS — contd.

Trailing Cable, V.R.L. T.R.C.S.,  
6.6 K.V. (Spec. 50-51/68). Nov.  
15.

#### STATE RIVERS AND WATER SUPPLY COMMISSION.

12 Cusec Centrifugal Pump. Oct.  
31.

16-run Combines (2). Oct. 31.  
35 H.P. Pneumatic Tyred Trac-  
tors (6). Oct. 31.

65 H.P. Diesel Engine at Jung  
Dooen Pumping Station. Oct. 31.

Pneumatic Tyred Front End  
Tractor Loader. Oct. 31.

### MISCELLANEOUS.

Centrifugal Pump, 3-inch, 3-  
stage, and Electric Motor, 15 h.p.,  
7,000 cap., Purchase of, from Tal-  
langatta Waterworks Trust. Oct.  
30.

Salt Glazed or Concrete Pipes,  
9 in. and 6 in., for Geelong Water-  
works and Sewerage Trust. Nov.  
9.

Trench Cutting Machine and  
Spare Parts; Portable Air Com-  
pressor Plant, complete with Ac-  
cessories; Pressure Water Pipes,  
4 in. and 1 1/2 in. Internal Dia., for  
Geelong Waterworks and Sewer-  
age Trust. Nov. 21.

### QUEENSLAND

#### IRRIGATION AND WATER SUPPLY COMMISSION.

Flow Metering Equipment, Re-  
cording and Integrating, for Clare  
(Job 1688). Oct. 30.

Shovels, 1 1/2 cub. yd. (4), new or  
re-conditioned. Nov. 3.

Tracked Crane, with 70 ft. boom,  
to lift 15 cwt. at 25 ft. radius, and  
complete with 1 cub. yd. Dragline  
Equipment. Nov. 3.

#### DEPARTMENT OF CO- ORDINATOR GENERAL OF PUBLIC WORKS.

Spillway Gates (8), Sector Type,  
20 ft. x 23 ft., for Somerset Dam.  
Nov. 27.

#### IRRIGATION AND WATER SUPPLY COMMISSION.

Crane, Rubber-tyred, Tractor-  
type (1). Nov. 3.

Diesel Generators, 100 KVA, 415-  
volt, 3-phase, (2). Nov. 3.

Rock Drills (30), approx. weight  
45-50 lbs. Nov. 3.

Tippling Trucks or Rock Bug-  
gies, Diesel Steel-bodied, approx.  
6 cub. yd. cap. (12). Nov. 3.

Welding Sets, portable internal  
combustion, 300 to 400 amp., (2).  
Nov. 3.

#### STATE ELECTRICITY COM- MISSION.

Crane Runway (Spec. 172).  
Nov. 15.

(Turn to page 89.)



**LYSAGHT'S**

100% AUSTRALIAN MADE, FROM AUSTRALIAN MATERIAL

Specify "LYSAGHT'S" WIRE, WIRE NETTING, Etc.

#### WIRE

Fencing and all  
other Classes.

#### WIRE NETTING

Black, Black Oiled  
and Galvanized.

#### HARD WIRE

Iron and Special (Long  
Distance).

#### WIRE NAILS

Brads, Panel Pins, Cloths, Slates' Nails, Staples.

All the leading MERCHANTS, STOREKEEPERS and AGENTS  
sell our manufactures.

#### ZINC OXIDE (Dry)

All Grades.

**LYSAGHT BROS. & COMPANY PTY. LIMITED.**

Registered Office and Works:

BLACKWALL PT. ROAD, FIVE DOCK, N.S.W.

City Office: 17 BRIDGE STREET, SYDNEY, N.S.W.

## BRASS RODS & TUBES

We carry a comprehensive range of  
brass rods and tubes in all sizes and  
will value your enquiries.

## WRIGHT AND COMPANY

For Better Metal Service

81 CLARENCE STREET, SYDNEY

Phone: BX 1211 (6 lines)





**Torsion**  
SPRINGS OF ALL TYPES & SIZES  
AUTOMATIC PRODUCTION  
**WHITELAW SPRINGS PTY. LTD.**  
562 SPENCER ST, MELBOURNE, PHONE: FJ1135

#### CURRENT TENDERS — contd.

Distribution Materials (Spec. 245). Nov. 1.  
Hard-Drawn Bare Copper Cable (Spec. 246). Nov. 8.  
Main Transformers, 132, 66, 22, 11 and 5.5 kV. (Spec. T/F2). Dec. 13.  
Oil-Engine-driven Electrical Generating Plant (Spec. 240). Dec. 6.  
Oil Storage Tanks (Spec. 242). Nov. 22.  
Transformers, 3 phase and single phase (Spec. 241). Dec. 6.  
Turbo-Alternators (2), water-driven, 11,000 V., 18,000 kW (Spec. T/F1). Nov. 29.  
Wood Burning Gas Producers (Spec. 247). Dec. 20.

**STATE STORES BOARD.**  
Grab Crane, 3 cub. yd. cap.; Mud Bucket, 3 cub. yd. cap.; Heavy Plate Grab Bucket. Nov. 14.  
Steel Wire Rope. Oct. 31.

#### MISCELLANEOUS.

Fork End Loader (Spec. 199/50), for Townsville Regional Electricity Board. Nov. 6.  
Plan Printing Machines, for Cairns Regional Electricity Board (Con. L50/21). Jan. 23.  
Switchgear, Relays and Instruments, for Cairns Regional Electricity Board. Dec. 6.  
Switchgear, 22,000 and 6,600 volt, for Cairns Regional Electricity Board (Con. L50/20). Dec. 13.

#### SOUTH AUSTRALIA

**SUPPLY AND TENDER BOARD.**  
Coal Grabs (2), for Adelaide. Oct. 30.

#### WEST AUSTRALIA

##### GOVERNMENT TENDER BOARD.

Cast Manganese Steel Railway Crossings. Dec. 21.  
Crane, 1 ton (Sch. 523A). Nov. 9.  
Forging Machine, for Railways. Nov. 16.  
Mobile Crane, Wheel Mounted. Dec. 14.  
Pumping Machinery, for Kalamund Pumping Station (Sch. 499A). Nov. 9.  
Railway Wagon Equipment. Dec. 7.  
Steam Raising Plant, for Colie Power Station. Dec. 14.  
Steel Sections, for Railways. Nov. 16.  
Telephone Exchange, automatic. Dec. 14.

#### TASMANIA

##### HYDRO-ELECTRIC COMMISSION.

Crusher Plant Feeders (C.E. 213). Nov. 22.  
Pneumatic Concrete Placing Gun (C.E. 190). Nov. 15.  
Side-Tipping Mine Cars, Branch-Type, 4-cub. yd. cap. (12), (C.E. 221). Nov. 21.

#### NEW ZEALAND

##### HYDRO ELECTRIC DEPARTMENT.

Filtration Plant at Tauranga Borough Council. Nov. 28.  
Switchgear, steelwork, 110 kV. Nov. 14.  
Outdoor Switchgear and Steelwork, 50 kV (Con. 160). Nov. 28.  
Synchronous Condensers (2), 30,000 KVA. Nov. 21.  
Transformer Bank and Spare Unit, 50 MVA, 220/110/11 kV. Nov. 7.

##### MISCELLANEOUS.

Filtration Plant (Con. 126). Nov. 28.

#### DEPARTMENT OF RAILWAYS—NEW SOUTH WALES.

TENDERS enclosed in sealed envelopes which must be endorsed "TENDER FOR ....", addressed to the Commissioner for Railways, 19 York Street, Sydney, will be received on the date and time shown for services specified. Tenders may be lodged in the Tender Box, Room 804A, 5th Floor, Railway House, 19 York Street, Sydney, or posted to the above address.

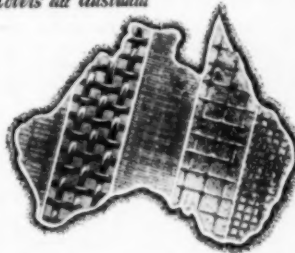
Wednesday, 22nd November—12 noon.

For the manufacture, supply and delivery of forty-six (46) Four-Wheel Brakevans Code C.H.G., in accordance with Specification No. 2207. Copies of Specification and Drawings obtainable at standard prices from Chief Mechanical Engineer, Room 202, Railway House, 19 York Street, Sydney. Telephone enquiries, M4401, Ext. 889.

No tenders necessarily accepted. Make cheques payable to Commissioner for Railways. Any tender unaccompanied by deposit, as provided in conditions of contract, may be rejected.

S. R. NICHOLAS,  
Secretary for Railways.

*Covers all Australia*



**WOVEN**  
*Wire Gauge*

of every description  
manufactured in steel,  
galvanised, brass,  
copper, monel, tinne,  
bronze, stainless steel,  
silver.

For Mining Screens, Quarries, Harvesters, Grading Metal, Barley, Malt, Flour, Petrol.

#### WIRE WORK OF EVERY DESCRIPTION

Such as Baskets for Annealing, Heat Treatment, Plating and all types used in manufacturing Oven Racks, Grillers Grids, Ice Chest and Refrigerator Trays—Hoosier Machine Belts, "Melwire" Ties.

#### TUBE AND PIPE WORK

Guards for Windows and Machinery, Chain Link Netting for Tennis Courts, Fencing, Partitions and Industrial Hand Trolleys. Conveyor Belts in all metals for all manufacturing purposes.

**MELBOURNE WIRE WORKS**

55-59 CREMORNE STREET RICHMOND VICTORIA

EST. 1852

Phone: JB 2641 (5 lines)

Telegrams and Cables: "Melwirworks"

>W & G<

"DUALFACE"

**SLIDE RULES**

MADE IN AUSTRALIA — EXPORTED THROUGHOUT THE WORLD

*There's a >W&G< Slide Rule to suit your need •*

- Model 432—"DUALFACE" COMPREHENSIVE.—A popular general purpose slide rule for engineers, architects, scientists, electrical engineers, students, etc.
- Model 454—"DUALFACE" ARTILLERY AND SURVEY.—A general purpose rule of particular interest to those concerned with trigonometrical functions.
- Model 465—"DUALFACE" SHIPPING FREIGHT AND GENERAL PURPOSE.—Designed specifically for shipping agents.
- Model 476—"DUALFACE" TRIGONOMETRICAL.—A newly designed rule for surveyors and civil engineers, covering all their slide rule needs (stadia, etc.) in one instrument.

**Complete Instructions supplied with all Rules**

All >W & G< Slide Rules are Fully and Accurately Engraved and Filled with Special Enamels.

AVAILABLE AT ALL STATIONERY & DRAWING OFFICE SUPPLIERS



## SHEET METAL AND WELDING

BLUE PRINT WORK A SPECIALITY • GUILLOTINING for the Trade • SUB-CONTRACT WORK UNDERTAKEN • DOMESTIC REFRIGERATOR CABINETS • FLUORESCENT LIGHTING—all Types • OXY • ELECTRIC • SPOT WELDING

### DON METALCRAFT COMPANY

9-15 Glen Street, MARRICKVILLE, N.S.W.

LL 1243

## HEAT SHAPED

**Canco**

## PISTON RINGS

**EGLINTON & CO. LTD.**

CAPPER STREET, KENT TOWN, SOUTH AUSTRALIA.

A FULL RANGE.  
FREE FROM  
DISTORTION.

HEAT SHAPED.

Telegrams :  
"PISTONRINGS,"  
ADELAIDE.

# INDEX OF ADVERTISERS

Vol. XXXV - No. 1804 . . . October 28, 1950.

Page.		Page.		Page.
24	Abacus Instrument Co.	37	Nonporite Pty. Ltd.	21
27	Alabama, A., & Sons Pty. Ltd.	81	Oakey, J., & Sons Limited	77
36	Acta Ltd.	80	O'Brien, O. H. (Sydney)	41
9	Air Control Equipment Pty. Ltd.	87	Olympic Metal Industries	30
61	Air Plant Hire	73	Ormiston Rubber Co. Pty. Ltd.	65
56	Alpha Eng. Co. Pty. Ltd.	70	Page Eng. Co. Ltd.	82
55	Amplion (A/asia.) Pty. Ltd.	3	Patience & Nicholson Ltd.	26
84	Anchor Eng. Co. Pty. Ltd.	88	Philips Electrical Industries of A. Pty.	
42	Andries, E., & Sons Pty. Ltd.	83	Ltd.	21
	Apemco	42	Phillips, Ormonde, Le Plastrier &	
17	Arendsen, H., & Sons Pty. Ltd.	31	Kelson	64
8	Atlantic Union Oil Co. Ltd.	5	Pioneer Spring Co. Ltd.	87
71	Austral Chain Co.	31	Presha Eng. Co. Pty. Ltd.	51
78	Austral Metal Pressing Pty. Ltd.	31	Protector Goggle Co.	42
35	Austral Rock Milling Pty. Ltd.	16	Purvis-Glover Eng. Pty. Ltd.	71
36	Austral Tools Pty. Ltd.	52	Raetz, C. B.	27
	Automatic Electric Heating Appliances	64	Randie Photo Eng. Co. Pty. Ltd.	76
82	Pty. Ltd.	55	Red Pty. Ltd.	62
	B.S.F. Electric Co.	21, 65	Red Point Tool Co.	63
47	BX Plastics Ltd.	41	Richardson, H., Pty. Ltd.	35
65	Babcock & Wilcox of Aust. Pty. Ltd.	86	Robertson & Lansley Pty. Ltd.	55
	Ballarat Litho. & Printing Co. Pty. Ltd.	49	Ronaldson Bros. & Tippett Ltd.	50
82	Barb, Walter, Pty. Ltd.	50	Seamless Containers Pty. Ltd.	45
43	Barr, W. N., Pty. Ltd.	64	Selex Decal Pty. Ltd.	74
57	Bearing Service Co. of Aust. Pty. Ltd.	41	Sharp & Musgrave	74
39	Beetle-Elliott Ltd.	66	Sheraton, G. L.	74
46	Bennett Chain Co. Pty. Ltd.	36	Silicate & Dolomite of Aust. Pty. Ltd.	66
69	Bethlehem Steel Corporation Ltd.	66	Simmonds Aerocessories Ltd.	14
32	Birlec Limited	30	Simpson Agencies Pty. Ltd.	19
30	Burley & Co. (1910) Pty. Ltd.	71	Sintered Alloys Pty. Ltd.	68
83	Bodington, R., & Co. Pty. Ltd.	85	Skinner, W. R.	71
66	Bradshaw Automatics Pty. Ltd.	23	Smith Bros. Pty. Ltd.	71
33	Brehaut, H. E., Pty. Ltd.	20	Smith, Copeland & Co. Pty. Ltd.	23
34	Brewer, W. H., Pty. Ltd.	46	Sneddon & Kingston	45
	British General Electric Co. Pty.	47	Sortergraf Co.	78
	Ltd. (Front Cover)	86	Smith, A., Wallace	68
61	British Optical Co. Pty. Ltd.	71	Spruson & Ferguson	68
79, 80	Brock, J. & F., Bros. Pty. Ltd.	76	Stearfield, M.	68
72	Brose Valves Ltd.	76	Steen, W. B., & Co. Ltd.	76
20	Brown, E. T., Ltd.	76	Sutton Tool & Gauge Mfg. Co. Pty. Ltd.	54
79	Bryans, E. S.	36	Swift & Company Limited	24
91	C. C. Die Castings Ltd.	73	Taylor & Wearing	86
	C.R.M. Division of Lyssaght's Works Pty.	84	Telford, Smith	84
	Ltd.	81	Thompson & Williams	82
38	Cameron & Sutherland Ltd.	10	Thompsons (Castlemaine) Ltd.	62
36	Camichael, W. T., Ltd.	88	Thornthwaite, H. G., & Co.	51, 56
7	Carr Fastener Co. of Aust. Ltd.	7	Toroid Industrial Supplies Pty. Ltd.	13
85	Carrier Air Conditioning Ltd.	7	Treliving, E., & Sons Ltd.	86
64	Cartwright, O. F.	26	W. & G. Record Processing Co. Pty. Ltd.	89
37	Casolin Pty. Ltd.	34	Warman & Douglas	78
81	Castalloy Ltd.	36	Warren & Brown Pty. Ltd.	33
86	Churchley, R. B., Pty. Ltd.	30	Welded Products Ltd.	58
45	Commonwealth Moulding Pty. Ltd.	48	Wells, W. H., Pty. Ltd.	66
77	Conaghan, Robert A., Pty. Ltd.	66	Wembley Eng. & Refrigerating Co. Pty.	
46	Connolly, J., Ltd.	89	Ltd.	79
86	Coybett, R., Pty. Ltd.	30	Wentworth, H. A., & Co. Ltd.	86
76	Crest Chemical Co. Pty. Ltd.	36	Westcott, Hazell Eng. & Steel Ltd.	25
85	Curlewis, C. P., & Co. Pty. Ltd.	36	Weston's Pty. Ltd.	4
66	Davis Lacquer Products	85	Wessberg & Tulander Pty. Ltd.	59
62	Dawn Mfg. Co. Pty. Ltd.	67	Whitlaw Springs Pty. Ltd.	35
90	Dcn Metalcraft Co.	16	Wilcolator Mfg. Co. Pty. Ltd.	80
44	Dreadnought Valve Pty. Ltd.	47	Williams Dredge & Haydon Pty. Ltd.	62
2	Dunkerley Hat Mills Ltd.	30	Witzig, P., & Co. Pty. Ltd.	66
27	Durham Chemical (Aust.) Pty. Ltd.	35	Woods, W. E., Ltd.	38
83	Earnshaw, J. W., Pty. Ltd.	60	Woodward & Thurston Pty. Ltd.	27
52	Ebeling, C., & Sons, Pty. Ltd.	89	Wright & Co.	88
90	Eglinton & Co. Ltd.		Yannoulatos, Emm. (Overseas) Pty. Ltd.	48
	Electric Control & Eng. Ltd.			
	Electronic Industries Imports Pty. Ltd.			
	Engineering & Industrial Supplies Co.			
	Esdaille, E., & Sons Pty. Ltd.			
	Excelsior Supply Co. Pty. Ltd.			
	Extruded Metals Pty. Ltd.			
	Eyelets Pty. Ltd.			
	F. G. S. Products Pty. Ltd.			
	Ferro Enamels (A.) Pty. Ltd.			
	Flavell, A., Pty. Ltd.			
	Gadsden, J., Pty. Ltd.			
	Gardner Waern & Co. Pty. Ltd.			
	Gibson Battle & Co. Ltd.			
	Gilbert Lodge & Co. Ltd.			
	Goddard, H. G., & Co. Pty. Ltd.			
	Gordon Bros. Pty. Ltd.			
	Griffith, Hassel & Griffith			
	Grimwood Electrical Products Pty. Ltd.			
	Gutwirth & Sons			
	Harrison, A. S., & Co. Pty. Ltd.			
	Hartford Fire Insurance Co.			
	Hatrick, A. C., Pty. Ltd.			
	Healing, A. G., Ltd.			
	Heine, John, & Son Pty. Ltd.			
	Hello Plastics Pty. Ltd.			
	Henderson's Federal Spring Works Pty.			
	Ltd.			
	Hercules Steel Products Pty. Ltd.			
	Hobson Eng. Co.			
	Hughes, R., Pty. Ltd.			
	Ludovici, J. C., & Son Ltd.			
	Industrial Control Co. of Aust.			
	Industrial Service Engineers Pty. Ltd.			
	John, M. B., Ltd.			
	Johnson, C. H. R., Pty. Ltd.			
	Jones & Rickard Pty. Ltd.			
	Jones Bros. Coal Pty. Ltd.			
	Keeley, Wilson & Co.			
	Kelvinator (Australia) Ltd.			
	Kennett, L. T., Ladders Pty. Ltd.			
	Kismet Eng. Works			
	Kitto, T. C., & Co.			
	Leo Rogaly & Lewis Pty. Ltd.			
	Liberty Motors (A.) Pty. Ltd.			
	Liverpool Electric Cable Co. Ltd.			
	Ludovici, J. C., & Son Ltd.			
	Lyssaght Bros. & Co. Pty. Ltd.			
	Magnus Industrial Equipment Pty. Ltd.			
	Mandl, R.			
	Martin, G. H., Pty. Ltd.			
	Martin, Wilson Bros. Pty. Ltd.			
	Mastercraft Plastics			
	Mathews, S. J., Pty. Ltd.			
	McLellan, W. J., & Co. Pty. Ltd.			
	Meggitt Ltd.			
	McIlbourne Wire Works			
	Metal Coatings Pty. Ltd.			
	Metal Products Pty. Ltd.			
	Miller & Co.			
	Mills, W. J.			
	Minerals Pty. Ltd.			
	Mitchell, H. C.			
	Monsanto Chemicals (Aust.) Ltd.			
	Morris, J., Eng. Co.			
	Moss, L. R. W., Pty. Ltd.			
	Mote Ladders Pty. Ltd.			
	Munday, J., & Co.			
	New South Wales Government Railways			

**PRODUCING BRIGHTER,  
SMOOTHER, MORE DURABLE  
CASTINGS**



Our skilled organization and modern equipment are serving a wide variety of manufacturers. If you are planning a new product or re-designing an old one . . . bring your die castings to us.

Telephones :  
UL 1339  
UL 1344

# DIE CASTINGS LTD.

Works and Foundry :  
80 Belmore Road, Punchbowl  
Head Office: 213 Bridge Rd., Glebe, N.S.W.

Cables and  
Telegrams :  
" CASTINGS "  
Sydney



# Lift it **ELECTRICALLY** by **MAGNUS·KING**



At left is shown two types of "King" track used—"Double-bead" Track, ideal for light loads; and "Supertrack" for moderate loads. Below is a "King" Electric Chain Block cutaway to show some of the outstanding features for which it is renowned.



Precision pitched high duty iron sprockets.

Patent Automatic Load Chain Guards which ensure (1) Correct feeding of chain. (2) Warning of chain stretch. (3) Block stopping if chain is other than correctly positioned around sprocket. (4) Protection against excessive angular lifting.

Totally enclosed Gear Box: its precision gears are mounted on large diameter shafts. Every detail is designed to give trouble-free service for many years.

Special steel chain, proof tested to twice safe working load.

The Pendant "Tag" Switch has been specially designed for easy operation.

Note the ball bearing roller hook, controlled at top and bottom positions by safety limit switches.

	NO. OF FALLS OF CHAIN	LOAD IN TONS	LIFT SPEED FEET PER MINUTE
MARVEX	SINGLE	4	30
	DOUBLE	6	15
	SINGLE	6	30
	DOUBLE	1	15
MAMMOTH	SINGLE	1	30
	DOUBLE	2	15
	SINGLE	2½	30
	DOUBLE	3	15
	TRIPLE	7½	10
	QUADRUPLE	10	7½

Watch "Magnus-King" advertisements for latest Materials Handling Equipment news.

Ask a Magnus-King representative to call—without obligation on your part—to furnish you with all details of the NEW DESIGN "King" range of compact, balanced Electric Chain Blocks—"Marvex" and "Mammoth" models—designed and built by Europe's largest manufacturer of Materials Handling Equipment for the **efficient and reliable lifting and shifting of loads FROM ½ TO 10 TONS** . . . "King" Electric Chain Blocks embody

many features you should know about—**exclusive features** that guarantee maximum safety, long trouble-free life, and outstanding heavy-duty service . . . Each capacity and type may be equipped with Push Type, Hand-Geared or Power Trolleys as required.

**AVAILABLE FROM STOCK AND EARLY DELIVERY!**



Magnus Industrial Equipment Pty. Ltd., are Sole Australian Distributors and Manufacturers for Geo. W. King Ltd., of England. Some "King" equipment continues to be imported, but a number of their products are being manufactured by "Magnus", under licence.

"KING" ELECTRIC CHAIN BLOCKS—½ TO 10 TONS

"MAGNUS-KING" OVERHEAD TRAVELLING, WHARF, AND GANTRY CRANES—UP TO 120 TONS

"MAGNUS-KING" CONVEYORS OF ALL TYPES

"MAGNUS-KING" MONORAIL, SUPERTRACK, TROLLEYS, SWITCHES, CABLE REELS AND "SAFELEC" BUSBARS

★ **MAGNUS — ALSO MANUFACTURERS OF ALL TYPES OF CONVEYORS AND MATERIALS HANDLING EQUIPMENT.**

## MAGNUS INDUSTRIAL EQUIPMENT PTY. LTD.

368 COLLINS STREET, MELBOURNE. TELEPHONE MU 6957 (3 lines)

SPECIALISTS IN MATERIALS HANDLING EQUIPMENT

— CONVEYING AND ELEVATING ENGINEERS.

NEW SOUTH WALES:  
Magnus Industrial Equipment Pty. Ltd.  
Unwin's Bridge Rd. St. Peters  
Phone: LA 3329

QUEENSLAND:  
Bourke & Radford  
129 Adelaide St. Brisbane  
Phone: B 3070

SOUTH AUSTRALIA:  
Pascoe & Co. Ltd.  
282 Port Rd., Woodville  
Phone: M 7127

WESTERN AUSTRALIA:  
Atkins (W.A.) Limited  
894 Hay St. Perth  
Phone: BA 2001

M.E.A.M.